

Our Commitment is as strong as our product.

Customers select Brown's Concrete products to create a beautiful and unique reflection of their own personal taste.

That's why we pledge that our quality manufacturing, product knowledge, and service will exceed even the highest expectations. When planning your next project, look for products from Brown's Concrete. Ask your dealer or call our toll-free number for the nearest dealer to you.



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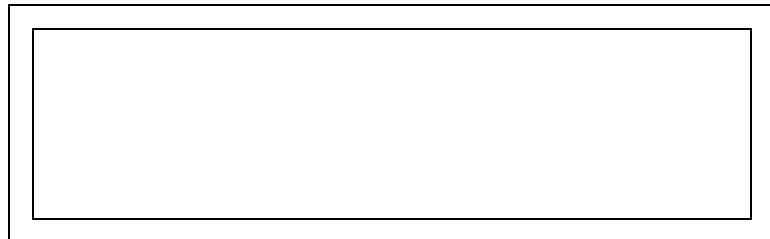
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Authorized Dealer



2013 HARDSCAPE SPEC MANUAL



New for 2013

Rosetta Grill Island Square Fire Pit
Freestanding Outcropping
Old Mission Paver Accent Planter
Athenian Paver—Coming Soon!!



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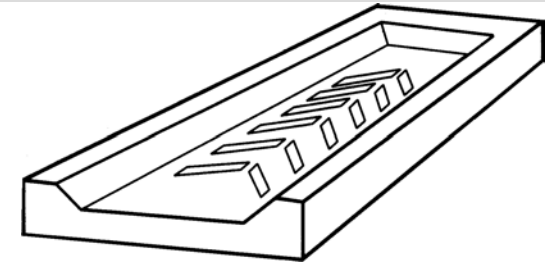
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Although care was taken to ensure the enclosed information is as accurate and complete as possible, Brown's Concrete does not assume responsibility for errors or omissions resulting from the use of this Manual.

SPLASH PADS

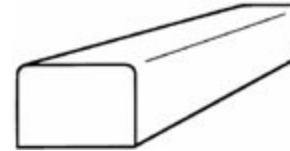
SPLASH PADS (from Brooklin)

Length: 600 mm (24")
Width: 300 mm (12")
Height: 65 mm (2.5")
Color: natural



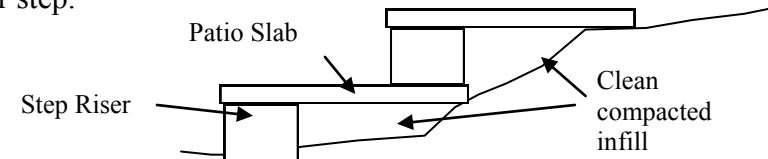
Splash Pads are ideal for channeling damaging water from your eavestrough downpipe away from your home. This helps keep your basement dry and reduces soil erosion.

STEP RISERS



Length: 610 mm (24") or 760 mm (30")
Width: 150 mm (6")
Height: 95 mm (3 3/4")
Colour: Natural

Step risers are designed to be used with patio slabs to create a riser step.



PAVER LIGHT

Paver Lights are a unique outdoor lighting alternative – the light fixtures are the exact same size as our paving stones so they can be installed directly in your walkway or driveway.

Lights and accessories can be purchased separately or in kits – kits include eight or fourteen lights, transformer, wire, wire connectors and installation video.



STABILIZED JOINTING SAND

The stabilized version of jointing sand includes a polymer that, when wetted, forms an adhesive gel bond between the sand particles that helps reduce joint sand loss due to wind and water erosion, while vegetation and ant infestation is effectively controlled.

TECHNISEAL's RG+ Polymeric Jointing Sand

- Becomes water resistant 90 minutes after installation.
- Maximum joint size 2.5 cm (1"), minimum penetration depth 4 cm (1.5").
- Comes in 22.7 kg (50 LB) bags, which is sufficient for approximately 10 m² (100 ft²).
- Colour options include Niagra Tan and Nordic Grey.



INSTALLATION

Because the polymer can adhere to the surface of the pavers causing stains if not properly installed, extra precautions are necessary when using these types of products.

Prior to installation, check the weather forecast to ensure the temperature will be above 0 degrees C (32 degrees F) and no precipitation is expected for the drying period. Check that the surface is completely dry. Spread the polymeric jointing sand uniformly over the surface.

Using a push broom, sweep the product so as to fill the joints completely down to their full depth. Avoid sweeping product over long distances so that the integrity of the polymeric joint is preserved; sweeping over large distances can cause the coarse particles to separate from the fines and binder.

For pavers thicker than 2", run a vibratory plate compactor over the entire surface to fully firm up the joints. For pavers with a smooth surface, use a protective pad. For slabs, hammer the entire surface with a rubber mallet to create a vibration that will fully firm up all the joints. Repeat the previous until the joints are completely filled and packed.

Sweep the surface with a fine bristle brush and remove all residue with a leaf blower. Wetting should take place in 200 square foot sections at a time. Produce a very fine mist so that the water falls gently without displacing the polymeric joint. Moisten the whole section lightly and in a continuous manner; avoid flooding the surface and causing runoff. Using a small screwdriver, verify the wetness in several areas. Once the joints are moistened 4 cm (1.5") deep, stop watering this section and move on to the next one.

To ensure optimal cohesion and long term stability, allow polymeric jointing sand to completely dry after initial wetting. Do not drive on area for 24 hours.

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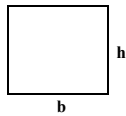
Area Calculations

A = Area, P = Perimeter, b = Base, h = Height, l = Angled Length
 $\pi = 3.1416$, C = Circumference (perimeter of circle), r = Radius,
 d = Diameter, c = length of arc, θ = angle

Square or Rectangle

$$A = bh$$

$$P = 2(b + h)$$

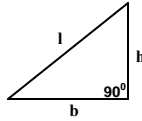


Triangle

$$A = \frac{1}{2}bh$$

$$P = b + h + l$$

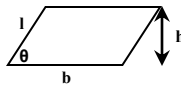
where $l = \sqrt{b^2 + h^2}$



Parallelogram

$$A = bh = b \sin \theta$$

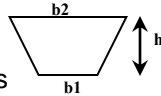
$$P = 2(b + l)$$



Trapezoid

$$A = \frac{1}{2}(b_1 + b_2)h$$

$$P = \text{sum of all sides}$$

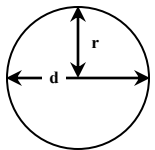


Circle

$$A = \pi r^2$$

$$C = 2\pi r$$

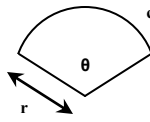
$$= \pi d$$



Sector

$$A = \frac{1}{2}cr$$

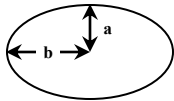
$$c = 2\pi r \cdot \frac{\theta}{360}$$



Ellipse

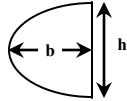
$$A = \pi ab$$

$$P = \pi[1.5(a+b) - \sqrt{ab}]$$



Parabola

$$A = \frac{2}{3}bh$$



Volume Chart – Cubic Metres (Cubic Yards)

Use the following table to estimate the volume of an excavation or backfill based on the surface area and total depth.

Surface Area square metres (square feet)	Excavation Depth			
	100 mm (4")	200 mm (8")	300 mm (12")	400 mm (16")
1m ² (10 ft ²)	0.1m ³ (0.12yd ³)	0.2m ³ (0.25yd ³)	0.3m ³ (0.37yd ³)	0.4m ³ (0.50yd ³)
5m ² (50ft ²)	0.5m ³ (0.62yd ³)	1.0m ³ (1.23yd ³)	1.5m ³ (1.85yd ³)	2.0m ³ (2.47yd ³)
10m ² (100ft ²)	1.0m ³ (1.23yd ³)	2.0m ³ (2.47yd ³)	3.0m ³ (3.70yd ³)	4.0m ³ (4.94yd ³)
25m ² (250ft ²)	2.5m ³ (3.09yd ³)	5.0m ³ (6.17yd ³)	7.5m ³ (9.26yd ³)	10m ³ (12.3yd ³)
50m ² (500ft ²)	5.0m ³ (6.17yd ³)	10m ³ (12.3yd ³)	15m ³ (18.5yd ³)	20m ³ (24.7yd ³)
100m ² (1000ft ²)	10m ³ (12.3yd ³)	20m ³ (24.7yd ³)	30m ³ (37.0yd ³)	40m ³ (49.4yd ³)
250m ² (2500ft ²)	25m ³ (30.9yd ³)	50m ³ (61.7yd ³)	75m ³ (92.6yd ³)	100m ³ (123yd ³)
500m ² (5000ft ²)	50m ³ (61.7yd ³)	100m ³ (123yd ³)	150m ³ (185yd ³)	200m ³ (247yd ³)

SANDS

BEDDING SAND

Bedding sand is used as a bedding material into which the pavers are installed.

Bedding sand should be angular and have symmetrical particles (not flat or elongated ones). The sand can be natural or manufactured (crushed from larger rock). There should be no mud or foreign materials in the sand. The gradation should conform to the following requirements of CSA A23.1:

Sieve Size	Percent Passing
10.0 mm	100
5.0 mm	95 to 100
2.5 mm	80 to 100
1.25 mm	50 to 90
0.630 mm	25 to 65
0.315 mm	10 to 35
0.160 mm	2 to 10
0.075 mm	0 to 1

Brown's has bedding sand available in bulk at the plant.

JOINTING SANDS

Jointing Sand is specifically designed for filling the spaces between concrete pavers. The irregular shape of the aggregate provides better stability than ordinary sand and resists wash out from between the stones.

Jointing sand should be angular and have symmetrical particles (not flat or elongated ones). To allow for proper placement, the sand should be dry. There should be no mud or foreign materials in the sand. The gradation should conform to the following requirements of CSA A23.1:

Sieve Size	Percent Passing
5.0 mm	100
2.5 mm	90 to 100
1.25 mm	85 to 100
0.630 mm	65 to 95
0.315 mm	15 to 80
0.160 mm	0 to 35
0.075 mm	0 to 1

Installation of jointing sand is discussed on Page 11.

Brown's sells the Play Sand from Kwik Mix as their regular jointing sand. The 66 lb (30 kg) bag should be able to cover 100 square feet.



PILLAR CAPSTONES



PARKWALL PILLAR CAP

Length: 610 mm (24")

Width: 610mm (24")

Height: 75mm (3")

Finish a pillar the right way with the Park-wall Pillar Pier Cap. Designed to fit the Parkwall. See Page 53 for details on how to construct columns using Pisa Light Corners or Parkwall /Parkwall Classic Corners.

BELVEDERE COLUMN CAP

Length: 686 mm (27")

Width: 686 mm (27")

Height: 64 mm (2.5")

Finish a pillar or column with the Belvedere Column Cap for the perfect natural appearance.
Designed to fit the Belvedere Corner Pallet (pg 49).



Measurement Equivalents

Length Equivalents

Units	Centimeters	Metres	Inches	Feet	Yards
1 Centimeter	1	0,01	0.3937	0.03281	0.01094
1 Metre	100	1	39.3701	3.28084	1.0936
1 Kilometer	100000	1000	39370	3280.84	1093.6
1 Inch	2.540	0.0254	1	0.08333	0.0278
1 Foot	30.48	0.3408	12	1	0.33333
1 Yard	91.44	0.9144	36	3	1
1 Mile	160934	1609.34	63360	5280	1760

Surface Equivalents

Units	Square Feet	Square Yards	Acre	Square Metres
1 Square Foot	1	0.1111	2.2957×10^{-5}	0.0929
1 Square Yard	9	1	0.000207	0.8361
1 Acre	43560	4840	1	4046.86
1 Square Metre	10.7639	1.19599	0.000247	1
1 Hectare	107639	11960	2.471	10000

Volume Equivalents

Units	Cubic Inches	Cubic Feet	Cubic Yards	Cubic Metres
1 Cubic Foot	1728	1	0.03704	0.02832
1 Cubic Yard	46656	27	1	0.76455
1 Cubic Metre	61024	35.3147	1.30795	1

Weight Equivalents

Units	Ounces (avdp)	Pounds (avdp)	Tons	Kilograms	Tonnes
1 Ounce (avdp)	1	0.0625	3.125×10^{-5}	0.02835	2.835×10^{-5}
1 Pound (avdp)	16	1	0.0004464	0.4536	0.0004536
1 Ton	32000	2000	1	907.185	0.907185
1 Gram	0.03527	0.002205	1.102×10^{-6}	0.001	1×10^{-6}
1 Kilogram	35.27	2.205	0.001102	1	1000
1 Tonne	1×10^{-6}	2205	1.1023	1000	1

Approximate Weight of Materials

	lbs./ft ³	lbs./yd ³	kg/m ³
Cement, mortar	135	3645	2162
portland	197	5309	3150
slurry	90	2430	1442
Clay, compacted (typical)	109	2943	1746
dry excavated	68	1836	1089
dry lumps	67	1809	1073
wet excavated	114	3078	1826
wet lumps	100	2700	1602
Concrete, gravel	150	4050	2403
Earth, dense	125	3375	2002
packed	95	2565	1522
soft loose mud	108	2916	1730
dry excavated	70	2100	1249
moist excavated	90	2430	1442
wet excavated	100	2700	1602
Granite, broken	103	2781	1650
flakes	40	1080	641
solid	168	4536	2691
Gravel, loose, dry	95	2565	1522
pit run (graveled sand)	120	3240	1922
dry (¼ to 2")	105	2835	1682
wet (¼ to 2")	125	3375	2002
Limestone, broken or crushed	97	2625	1554
solid	163	4400	2611
Sand, dry loose	100	2700	1602
slightly damp	120	3240	1922
wet	130	3510	2082
wet packed	130	3510	2082
Stone, crushed	100	2700	1602

NOTE: the above weights may vary in accordance with moisture content, texture, etc.

GEOTEXTILES

NON-WOVEN GEOTEXTILE

Mirafi® 140N is a nonwoven geotextile comprised of polypropylene staple fibers. 140N is recommended in retaining wall installation to provide separation between the drainage layer and native soils

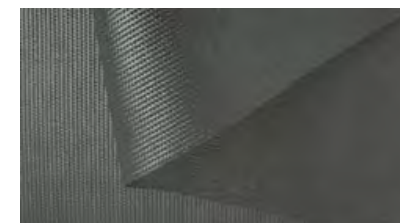


Roll: 1.21 m x 13.7 m (3' x 100')
Apparent opening size: 0.212 mm
(70 US Sieve)

Grab tensile strength (strength @ ultimate) (elongation @ ultimate)	kN (lbs) %	0.53 (120) 50
Mullen Burst Strength	kPa (psi)	1550 (225)
Trapezoidal Tear Strength	kN (lbs)	0.22 (50)
Puncture Strength	kN (lbs)	0.30 (65)

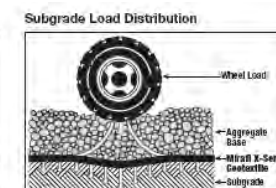
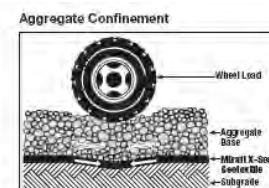
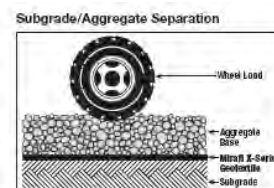
WOVEN GEOTEXTILE

Mirafi® 500XL is a UV stabilized woven polypropylene. 500XL is recommended under interlocking paver installations to provide both separation (between the granular base and native sub-grade soils) and load distribution.



Roll: 3.8 m x 154 m (12.5' x 504')

Grab tensile strength (strength @ ultimate) (elongation @ ultimate)	kN (lbs) %MD/CD	0.62 (140) 15/10
Mullen Burst Strength	kPa (psi)	2240 (325)
Trapezoidal Tear Strength	kN (lbs)	0.20 (45)
Puncture Strength	kN (lbs)	0.29 (65)

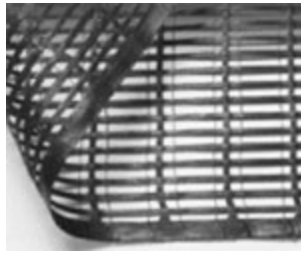


GEOGRID

GEOGRID

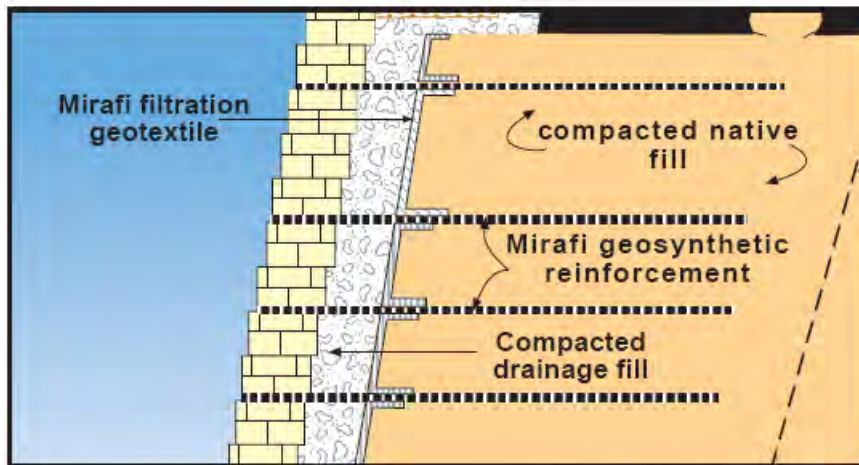
Miragrid® XT geogrids are high strength, high tenacity, high molecular weight polyester geogrids in a range of tensile strengths to meet the most demanding applications for soil reinforcement.

Miragrid® 2XT is a stock product. Miragrid® 3XT and 5XT are special order.



Property	Units	2XT	3XT	5XT
Roll Width	m (ft)	1.22 (4.0)	3.6 (12)	3.6 (12)
Roll Length	m (ft)	13.7 (45)	45.7 (150)	45.7 (150)
Roll Weight	kg (lbs)	4.5 (10)	55 (123)	60 (133)
Total Area	m ² (yd ²)	16.7 (20)	164.5 (200)	164.5 (200)
Ultimate Tensile Strength	kN/m (lbs/ft)	29.2 ² (2000) ²	43.8 (3000)	62.7 (4300)
Creep Reduced Strength	kN/m (lbs/ft)	17.5 ² (1200) ²	26.3 (1800)	37.6 (2580)
Long Term Design Strength ¹	kN/m (lbs/ft)	13.8 ² (949) ²	22.7 (1558)	32.6 (2234)

Notes: 1- Based on Type 3 backfill 2- Values for 2XT are for both machine and cross machine directions.



Paver Installation Instructions

STEP 1 - DESIGN AND LAYOUT

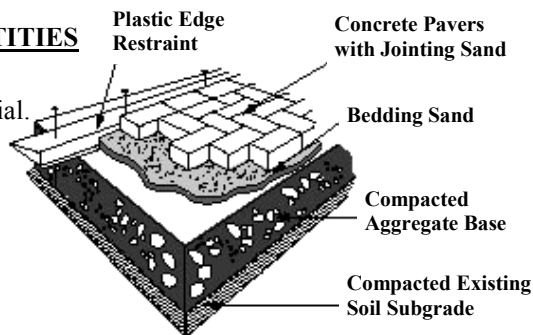
The starting point of any project is the preliminary design drawing. The drawing should be done on graph paper to a convenient scale so that it is easy to read and estimate quantities from.

POINTER: Before finalizing the design, it is recommended that you stake out the proposed area of construction and then park vehicles (for driveways) / place furniture (for patios) in the staked out area to ensure that the final product is adequately sized.

STEP 2 - ESTIMATE QUANTITIES

Items to be estimated include:

1. Volume of excavated material.
2. Volume of aggregate base material.
3. Volume of bedding sand.
4. Square footage of pavers.
5. Linear length of edging.
6. Volume of jointing sand.



Pavers

The required square footage for the pavers is measured from within the staked out area. It is important to remember that some products are sold in full bundle quantities only, so careful planning will minimize wastage. However, it is also recommended that an additional amount of pavers be ordered to account for some degree of wastage, especially if there are a lot of cuts required.

Jointing Sand

Jointing sand is used to fill the spaces between the pavers after installed to ensure the proper interlock. Jointing sand typically comes in a 30 kg (66 lb) bag, which is sufficient for approximately 10 m² (100 ft²).

Edging

Some form of edge restraint is required along all outside edges. Measure the perimeter of the staked out area, with the exception of areas against existing buildings, walks or pavement. If plastic edging is used, remember to include sufficient spikes to secure the edging in place.

Bedding Sand

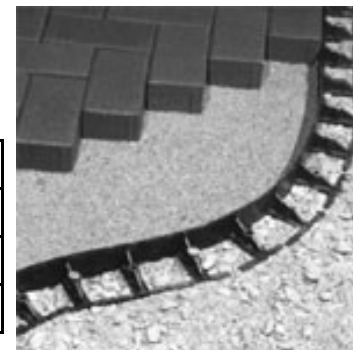
As the name indicates, bedding sand is used as a bedding material into which the pavers are installed. Provide for 25 mm (1") of loosely spread bedding sand over the total area of the pavers. When the pavers are compacted into place, some of the sand fills the spaces (joints) between the stones, and the total thickness reduces to approximately 17 mm (5/8").

FLEXIBLE DRIVEWAY EDGING

SNAP EDGE

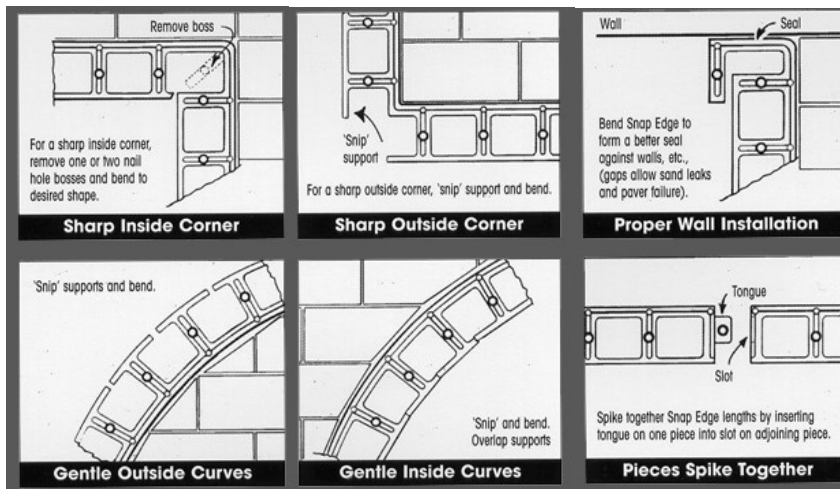
The Snap Edge[®] edging restraint system comes with a snip and flex adaptability to allow you to do gentle corners, sharp corners and straight edges.

Unit Length	8 ft
Pieces per Bundle	24
Linear Feet per Bundle	192
Weight of Bundle	36 lb/16 kg

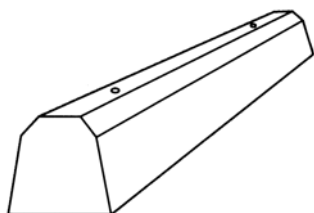


INSTALLATION INSTRUCTIONS

- To provide a secure base in which to install the edge restraints, the compacted gravel base needs to be extended beyond the area being paved. The rule of thumb is to extend the gravel base outwards in all directions equal to the total depth of the excavation.
- Snap all pieces together using tongue and groove connections to form a strong uniform edge along entire length.
- Snip back supports to allow for inside and outside radius if required.
- Secure Snap Edge down directly on top of compacted gravel base using 250 mm (10") spikes. For straight sections, use one spike every two feet for walks/patios, one spike every foot for driveways. For curves, use one spike for every hole. For corners, use one spike on each side.
- Backfill the entire perimeter with topsoil and then sod as normal. The full depth backfill allows the roots to help anchor the edging in place.

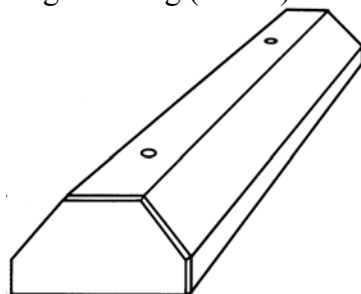


CONCRETE PARKING CURBS



6 Ft Curb

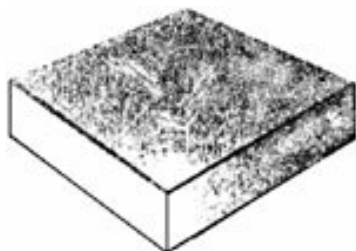
Length: 1800 mm (6')
Width: 150mm (6")
Height: 150 mm (6")
Weight: 78 kg (170 lb)



8 Ft Curb

Length: 2400 mm (8')
Width: 250 mm (10")
Height: 150 mm (6")
Weight: 143 kg (315 lb)

COTTAGE PADS



Length: 450 mm (18")
Width: 450mm (18")
Height: 87.5 mm (3.5")

Cottage pads are fundamentally double thickness patio slabs designed to help support heavy loads like elevated cottages.

DECK FOOT



Length: 300 mm (12")
Width: 300mm (12")
Height: 140 mm (5 5/8")
Available for 4" and 6" square posts.

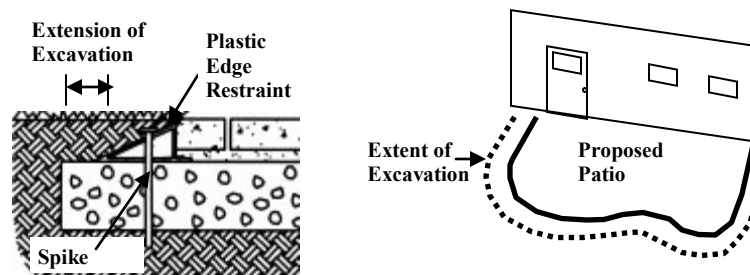
Deckfoot's unique design makes it an ideal choice for deck installations on various sites. Whether you are building at ground level, an elevated deck, or a leveled deck on a stepped gradient, Deckfoot makes it a snap.

Paver Installation Instructions

The Volume Chart on Page 4 of this Spec Manual can be used to assist in the volume calculation (using the surface area and total depth).

Aggregate Base

To provide a secure base in which to install the edge restraints, the area of excavation needs to be larger than the area being paved. The rule of thumb is to extend the excavation outwards in all directions equal to the total depth of the excavation. For example, if the total excavation is 300mm (12") deep, the excavated area should extend an additional 300mm (12") on all sides beyond edging.



The minimum recommended depths for the aggregate base are listed in the table below; please note that these depths can increase significantly based on the type of native soil, the local climate, and heavy traffic loads. It is highly recommended that a civil engineer be consulted to verify local conditions.

POINTER– All soils take up approximately 20-30% more space in a dump truck than after it is compacted into place. In other words, if you need to fill 100 m³ with base material, you will need to haul up to 130 m³ of loose material to the site. Remember to account for this in your estimate.

Excavated Material

The following table provides examples of how the total depth of the necessary excavation is calculated based on the aggregate depth.

POINTER– As with the aggregate base, remember to allow for the bulking up of the excavated material in the dump truck.

	Walkways, Patios	Driveways
Pavers	60mm (2 3/8")	60mm (2 3/8")
Bedding Sand (Compacted)	17mm (5/8")	17mm (5/8")
Aggregate Base	200-250mm (8-10")	300-500mm (12-20")
TOTAL DEPTH	277-327mm (11-13")	377-577mm (15-23")

Paver Installation Instructions

STEP 3 - EXCAVATION

POINTER: Remember to complete your locates prior to starting the work.

When completed, the base of the excavation should be graded to provide proper drainage to a suitable water discharge point (e.g. storm drain or ditch). Ensure the surface is free of debris such as large stones, roots, etc. Run a compactor over the base to evaluate the stability of the native material.

POINTER: If the stability of the soil is of question (e.g. soft, wet, loose), it is advisable to utilize a geotextile to act as a separation barrier (will prevent the base material from sinking into the existing soil).

STEP 4- BASE BACKFILL

The recommended material for base backfill is the same as that used for local road construction. When selecting the compactor, tell the supplier you want to reach 98% Proctor density for that type of material – a 7,000 lbf vibratory plate tamper is the recommended minimum compacting 4" lifts. A reversible compactor allows for 6" lifts.

Spread the material in loose layers of no greater than 150mm (6"), spray the necessary amount of water over the soil to lubricate it (but not create mud), and compact the material in place. As a rule of thumb, if the dumptruck leaves a depression in the completed area (when it backs up to dump the next load), additional compaction is required.

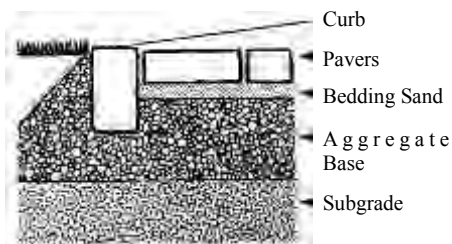
To check the final surface grades, place stakes around the perimeter of the project and at any crests or valleys, run string lines between the stakes, and check the depth off the lines using a measuring tape. Note that the final grades should maintain at a 2% slope (drop of 1/4" per every foot).

Once the general grades are verified, use a 3 m long straight edge to ensure the subbase is level– acceptable tolerances are $\pm 10\text{mm}$ ($\pm \frac{3}{8}"$). As a guide, a pencil should not be able to be slid under the straight edge at any point.

STEP 5 - CURB INSTALLATION

For concrete curbs (adjacent), a trench needs to be excavated into the aggregate base– the depth of the trench is based on the desired stickup of the curb.

For plastic curbing (previous page), the sections are placed directly on top of the aggregate base and staked down using 250mm(10") spikes.



CONCRETE DRIVEWAY CURBS

3 Ft Curb

Length: 900 mm (35.5")

Width: 83mm (3.25")

Height: 150 mm (6")



Three foot curbs can be installed flush with paving stones to eliminate raised curb, or can be set above paving grade for a more pronounced accent.

Metre Curb

Length: 1000 mm (39")

Width: 150 mm (6")

Height: 150 mm (6")



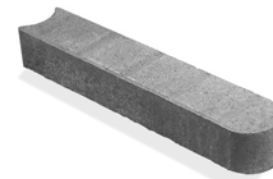
Metre curb stones are large sized curbs with broad features for a pronounced edge.

Bullnose Curb

Length: 570 mm (22.5")

Width: 115mm (4.5")

Height: 90 mm (3.5")



With curved ends, bullnose curbs can be used to form a straight border or a curved effect, lending itself to any landscaping contour.

ORDER INFORMATION

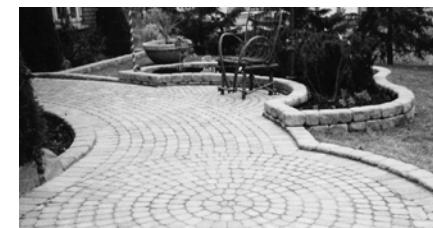
All curb units are sold individually.

For delivery, part cubes will be shrink wrapped.

	3ft Curb	Metre Curb	Bullnose Curb
Pieces per Bundle	36	20	80
Linear Feet per Bundle	108	65	150
Weight of Bundle	2016 lb/914 kg	2260 lb/1028kg	2400 lb/1088 kg

NOTE:

Wedgestone, Wedgestone Classic, Rosetta Dimensional Wall and Dimensional Classic can also be used as driveway edging.



CONCRETE (DRY BAGGED)

KWIK MIX

KWIK MIX is a manufacturer of high quality pre-mixed concrete products and related items.

Concrete (Stone) Mix.

- A perfectly proportioned blend of high quality Portland Cement, clean concrete sand, and dry crushed aggregate.
- Use where the thickness of finished concrete will be in excess of 2 inches. Each 66 lb bag will produce about 1/2 cubic foot of finished concrete.



Stone Mix

Sand Mix

- A perfectly proportioned blend of high quality Portland Cement and dry, clean brick sand.
- Use where thickness of finished concrete will not exceed 2 inches.
- 10 lbs of Concrete Sand Mix will cover 1 square foot to a thickness of about 1 inch.



Sand Mix

Mortar Mix

- A perfectly proportioned blend of high quality Type S Masonry Cement and sharp brick sand.
- Use as a Masonry binder for brick, block and stone, and as a parging mix.
- Each 66 lb bag will lay approximately 55 standard bricks or 12 standard blocks with a 3/8 inch mortar joint.



Mortar Mix

Parging Mix

- A blend of Type S Masonry Cement, fibers, fine sand and additives to produce a water and impact resistant coating for above and below grade use on masonry surfaces.
- Can be used as a coating on block walls or poured concrete.
- Each 66 lb bag covers 50 square feet to a thickness of 1/8".



Parging Mix

Paver Installation Instructions

STEP 6 - BEDDING SAND

The key to this step is to ensure a consistent thickness for the loose sand. The easiest way to do this is to use 19mm (3/4") diameter Schedule 80 PVC pipe for guide rails (the outside diameter is 25mm). Spread the sand loosely between a pair of pipes, then pull a straightedge along the top to level the sand out (see photo). Avoid disturbing the sand once in



STEP 7 - LAYING THE PAVERS

The laying pattern used is subject to personal preference; however, herringbone patterns are recommended for traffic areas.

Place chalk lines on sand at 2 m (6') intervals to provide straight line guides during installation. Always start laying at the lowest point so that stones cannot separate; place hand tight. Use a rubber mallet as required to adjust stones.

POINTER: Mix pavers from at least 4 different cubes at a time so that any colour variations between cubes are blended in.

Cut pavers to fill gaps along edges and around obstacles as required using cantilever splitters or masonry saws. For curves, place pavers beyond the final edge, mark off the desired curve, and then using a masonry saw cut the pavers in place (see photo). Ensure that area is washed down after cutting as the residue can create stains.



STEP 8 - COMPACTION AND FINISH

After all pavers are in position (or at the end of each day), sweep off the surface completely and then compact the pavers into the bedding sand using a 5000 lbf plate tamper.

Spread dry jointing sand and sweep into joints until full. Clean off surface and vibrate jointing sand into spaces using tamper. Repeat until joints are completely full.



Nordic/Nordic Classic/Nordic 80 mm

**** Nordic Classic and Nordic 80 mm are Special Order****

Nordic /Nordic Classic



Length: 200 mm (7.9")
Width: 100 mm (3.9")
Thickness: 60 mm (2.36")

Nordic 80 mm



Length: 200 mm (7.9")
Width: 100 mm (3.9")
Thickness: 80 mm (3.15")

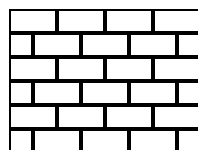
ORDER INFORMATION

All pavers shipped in full bundles only. Individual Nordic stones available only when picked up at the plant.

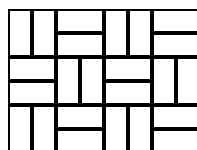
For Nordic Classic and Nordic 80 mm, minimum quantity required for production- call office for possible availability.

	Nordic/Nordic Classic	Nordic 80mm
Sq. Ft. per Bundle	106	93
Full Stones per Sq. Ft.	4.57	4.57
Total Stones per Bundle	495	432
Half Stones per Bundle	18	16
Full Stones per Bundle	477	416
Sections per Bundle	6	-
Stones per Section	81 (90 with half stones)	-
Sq. Ft. per Section	17.67	-
Ln. Ft. per Bdl (Soldier Course)	156 (full stones only)	139 (full stones only)
Weight per Bundle	2915 lb/1322 kg	3460 lb / 1566 kg

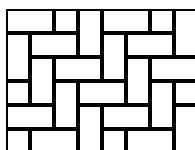
GENERAL LAYING PATTERNS



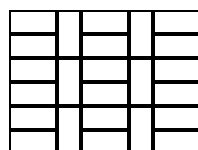
Runner Bond



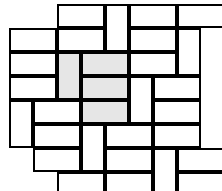
Parquet



90° Herringbone



Ladder



45° Herringbone

Cleaning Process

Once the stains are removed, the entire area should be thoroughly cleaned to remove any efflorescence and dirt. Note: Because of the effectiveness of the Efflorescence Cleaner, spot cleaning will be noticeable in the final product; therefore, it is recommended that the entire area be cleaned.

Prior to starting each application, thoroughly pre-wet the area with water, as well as any vegetated areas that may be subject to overspray and/or runoff. As a precaution, delicate vegetation can be pulled back or covered to protect from overspray.

Efflorescence Cleaner- Simply attach your water hose to the inlet port of the sprayer and you are ready to start. Working quickly, start at the highest point of your surface and work in 18 square metre (200 square feet) pre measured sections. Work side to side, making sure the entire surface is covered. If there is still cleaner remaining in the bottle after the section is done, apply the remaining cleaner as an additional spray over the same area- this will reinforce the cleaning application and prevent drying of the surface. Use a long handled stiff bristled broom to brush the treated area, loosening stubborn dirt and deposits. Rinse thoroughly (usually 5-6 rinses with a pressure sprayer until foaming is no longer visible. However, care should be taken to not blow or wash the sand from the joints- sand will remain in the joints if a wide spray nozzle is used and the angle of the spray is kept from directly penetrating the joints. Be sure to rinse all cleaner from the surface as you progress to additional sections until the entire surface is cleaned and thoroughly rinsed. An easy way to do this is to run a garden sprinkler over the area for two to three hours.

When the entire surface is cleaned and well rinsed, allow to dry and inspect. Repeat application to the white (efflorescence) areas if necessary.

For vegetated areas that were subject to overspray or runoff, dilute the areas one last time with large quantities of clean water.

Sealing

Allow at least 24 hours without moisture or surface dampness before sealing. If the pavers and jointing sand are not totally dry (not just surface dry), moisture blushing may occur under the sealer after it is applied, or the sealer may become cloudy/white.

Never re-sand paving joints between cleaning and sealing applications as this will leave residue on the surface of the pavers.

Paving Stone Sealer- For best results, use a lint free high pile roller and a metal paint tray to apply the sealer. Apply at a temperature above 7°C (45°F). Apply only one coat until pavement is fully saturate. Let dry for 24 hours before allowing traffic on the surface.

Resealing Pavers - For surfaces being sealed for the second time, use the WL2 Protective Sealant.

How Long to Wait Until Sealing

Sealing should be done only after the natural efflorescence process has been given time to take place. Efflorescence, being a whitish powder, is the deposit of small quantities of cement from within the pavers on its top surface after a series of wetting (rainfall) and drying (warm weather) cycles. Because a series of wet/dry cycles are required, which are weather dependant, there is no exact time frame which applies to every situation. However, allowing 8 weeks, with a minimum of 4 precipitation events during that time, is a common rule of thumb.

Stain Removal

Between installation and sealing, some pavers may become stained due to foot and vehicle traffic—this is common. However, it is important to remove these stains prior to sealing or else their appearance through sealing may become enhanced.

The first step is to inspect for any extremely stained, cracked or broken units which should be replaced. All items which cast shadows on the area (e.g. furniture) should be removed, if possible, to allow the area to dry evenly once stain removal and cleaning is completed. Similarly, automatic sprinkler systems should be turned off during cleaning and sealing operations.

Prior to using any of these products, refer to the respective products' labels for personal protection, installation and first aid suggestions.

Start stain removal at the bottom of the pavement and work up the slope in manageable sections. This prevents untreated areas from becoming wet, which can hide some stains.

Rust Remover- Pre-wet the stained area with water. Apply a liberal amount of the stain remover to the stained area only. Vigorously scrub the stain with a stiff bristle scrub brush and rinse immediately with generous amounts of water. Repeat if necessary.

Oil and Grease Cleaner- On a sealed surface, pre-wet the stained area with water; on a bare surface, apply dry. Apply a liberal amount of stain remover to the stained area and let stand for two to three minutes. Vigorously scrub the stain with a stiff bristle scrub brush and rinse away cleaner and residue thoroughly with water. Do not let the product dry on the surface.

Paint, Tar and Rubber Remover- Surface should, ideally, be warm to the touch. Remove excess material with a scraper. Apply sufficient Remover to cover the remaining stain. Allow product to stand for approximately 5 to 10 minutes. Do not let product dry on surface. Scrub stained area with a stiff bristle brush. Rinse thoroughly with water (strong water pressure works best). Repeat if necessary.

When all stains are removed, rinse the entire area down to ensure any residuals are washed away.

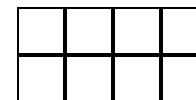
Nordic Square

Nordic Square is Special Order

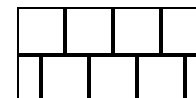


Length: 200 mm (7.9")
Width: 200 mm (7.9")
Thickness: 60 mm (2.36")

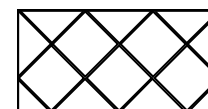
GENERAL LAYING PATTERNS



Stack



Runner Bond



45 Degree Stack

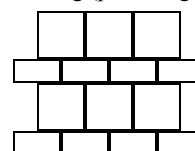
ORDER INFORMATION

Minimum quantity required for production.
Call office for possible availability.
Product sold in full bundles only.

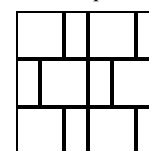
Sq. Ft. per Bundle	109
Stones per Sq. Ft.	2.29
Stones per Bundle	250
Ln. Ft. /Bdl. (Soldier Course)	164
Weight per Bundle	3052 lb / 1384 kg

ALTERNATE LAYING PATTERNS (NORDIC / NORDIC SQUARE)

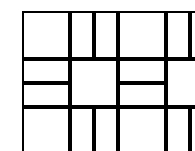
Nordic Stone can be combined with Nordic Square to create unique patterns such as the following (percentages based on total square footage):



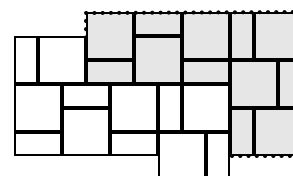
(33% Nordic,
67% Square)



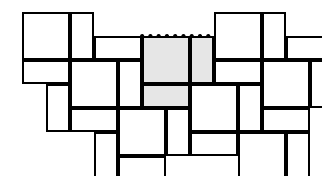
(33% Nordic,
67% Square)



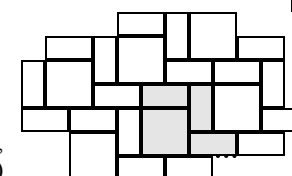
(50% Nordic,
50% Square)



(33% Nordic,
67% Square)



(50% Nordic,
50% Square)



(60% Nordic,
40% Square)

Pave Lok

****Pave Lok is Special Order****

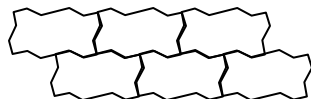


ORDER INFORMATION

Minimum quantity required for production,
call office for possible availability.
Product sold in full bundles only.

Sq. Ft. per Bundle	95
Stones per Sq. Ft.	3.67
Stones per Bundle	350
Ln. Ft./Bdl (as edging)	130
Weight per Bundle	2660 lb/1207 kg

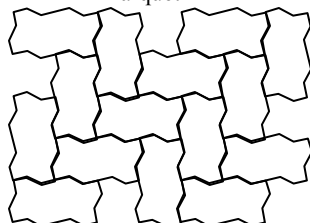
Length: 226 mm (8.9")
Width: 112 mm (4.4")
Thickness: 60 mm (2.36")



Runner Bond



Parquet



Herringbone

Duo Stone

****Duo Stone is Special Order****

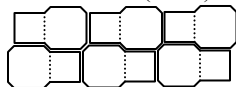


ORDER INFORMATION

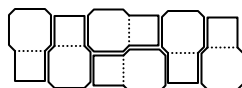
Minimum quantity required for production,
call office for possible availability.
Products sold in full bundles only.

Sq. Ft. per Bundle	100
Stones per Sq. Ft.	3.5
Stones per Bundle	350
Weight per Bundle	2800 lb / 1270 kg

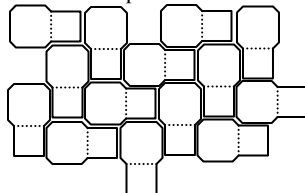
Length: 226 mm (8.9")
Width: 137 mm (5.4")
Thickness: 60 mm (2.36")



Runner Bond



Parquet



Herringbone

CLEANING AND SEALING

TECHNISEAL®

TECHNISEAL® offers high-end products that help consumers clean and protect the exterior surfaces of their home. Created in 1984, the Company has become a leading manufacturer of treatment products for the concrete paver industry.

Rust Remover.

- Effectively removes stains caused by steel, rusted metal, fertilizer, etc.
- Will not discolour the material. Contains no hydrochloric acid.
- For bare and previously sealed surfaces.

Oil and Grease Cleaner

- Removes motor oil and grease (BBQ).
- Dissolves, dislodges and encapsulates grease.
- Easy to rinse.
- For bare and previously sealed surfaces.

Paint Remover

- Effectively dissolves paint, tar or bitumen, rubber, and chewing gum.
- Easy to rinse with water.

Efflorescence Cleaner

- For newly installed pavers or pavers showing signs of efflorescence.
- Dislodges efflorescence and ground in dirt.
- Ensures even cleaning and brightens up the colour.
- Prepares the surface before the application of a sealant.
- Contains no hydrochloric acid.

WL1 Protective Sealant

- For surfaces that have never been sealed or have no sealant left.
- Enhances the original colour and provides a luxurious wet look.
- Satin finish
- Forms a long lasting protective film
- Solvent based.
- Microporous
- Comes in 3.78L and 18L containers— 1L covers 27 to 43 square feet.



ADHESIVES

BOND-LOC ADHESIVE



Bond Loc is specifically designed for quick and easy application to secure the final course or cap stone on retaining walls and steps.

Preparation

Read preparation and application instructions provided by the manufacturer prior to use.

Application

Rule of thumb – one 330 ml tube can create 9.8 m (32 ft) of ¼” bead. It is recommended that either two beads be applied (front/back) or an S bead be used.

Cleanup

Use mineral spirits or chlorinated solvents.

BUTYL TAPE

Butyl tape is a self adhesive pre-formed peel and stick material.

When changes may need to be made to the layout of your retaining wall, butyl tape is the recommended alternative to Bond Loc.

Roll size: 6m (20') x 6.4mm(1/4") x 12.8mm(1/2")

Preparation

Top of units to be swept clean prior to application.

Installation

Do not apply butyl tape if concrete units are wet.

Since the product is in tape form, the user simply applies the ribbon of tape to the area which is to be secured to, presses firmly along the entire length of the release paper backing, cuts the tape to length and removes the release paper.

Rule of thumb – one 6 m (20 ft) role can secure 3 m (10 ft) of capping, assuming a double bead is used.

Cleanup

Butyl tape can usually be lifted with a scraper if misapplied.

Tango

****Tango is Special Order****



Length: 178 mm (7")
Width: 229 mm (9")
Thickness: 60 mm (2.36")

ORDER INFORMATION

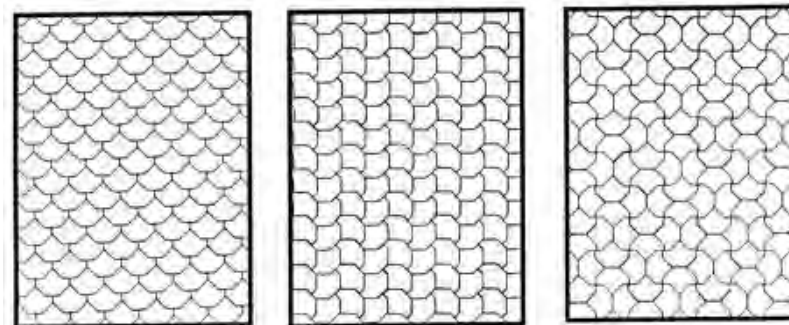
Minimum quantities required for production, call office for possible availability.

Product sold in full bundles only.

Sq. Ft. per Bundle	100
Stones per Sq. Ft.	3.6
Stones per Bundle	360
Weight per Bundle	2750 lb / 1247 kg

LAYING PATTERNS

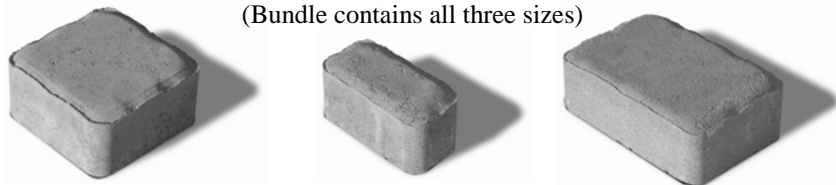
The Tango line offers three different layout patterns using a single paver unit.



Venetian / Venetian Classic

Venetian Random

(Bundle contains all three sizes)



Square (S)

Length: 120 mm (4.8")

Width: 120 mm (4.8")

Thickness: 60 mm (2.36")

Small Rectangle (SR)

Length: 60 mm (2.4")

Width: 120 mm (4.8")

Thickness: 60 mm (2.36")

Large Rectangle (LR)

Length: 180 mm (7.1")

Width: 120 mm (4.8")

Thickness: 60 mm (2.36")

	Full Cube	S	SR	LR
Sq. Ft. per Bundle	112	42.2	7	62.8
Stones per Sq. Ft.	-	6.4	12.9	4.3
Stones per Bundle	630	270	90	270
Sections per Bundle	9	-	-	-
Stones per Section	70	30	10	30
Sq. Ft. per Section	12.45	4.68	0.8	6.97
Weight per Bundle	3136 lb / 1422 kg	-	-	-

Venetian Soldier

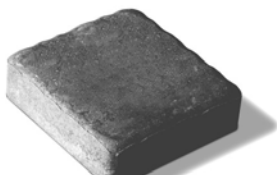


Length: 240 mm (9.5")

Width: 120 mm (4.8")

Thickness: 60 mm (2.36")

Venetian Square



Length: 240 mm (9.5")

Width: 240 mm (9.5")

Thickness: 60 mm (2.36")

Sq. Ft. per Bundle	88	99
Stones per Sq. Ft.	3.18	1.62
Stones per Bundle	280	160
Sections per Bundle	4	4
Stones per Section	70	40
Sq. Ft. per Section	22	24.8
Ln. Ft. /Bdl. (Soldier Course)	110	126
Ln. Ft. /Sec. (Soldier Course)	27.5	31.5
Weight per Bundle	2464 lb / 1118 kg	2772 lb / 1257 kg

All Venetian material shipped in full bundles only. Individual straps available only when picked up at the plant.

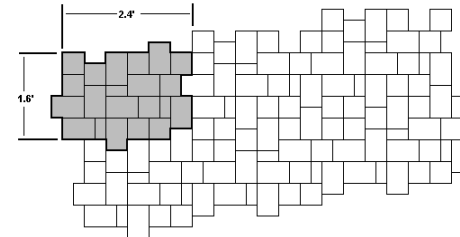
All Venetian Classic material sold in full bundles only.

Note: Photos above are Venetian. Venetian Classic not shown.

PROJECT PLANNER

Laying Patterns for Venetian / Venetian Classic

1. Venetian Soldier can be used to create all the general laying patterns shown for Nordic /Nordic Classic on Page 12.
2. Venetian Square can be used to create all the general laying patterns shown for Nordic Square on Page 13.
3. Venetian Soldier combined with Venetian Square can be used to create most of the alternate laying patterns shown on Page 13

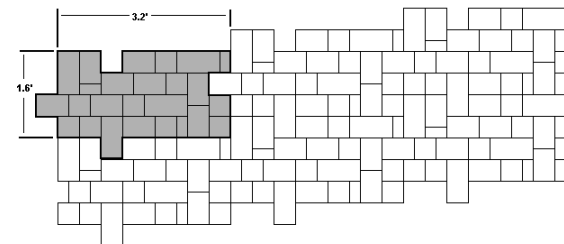
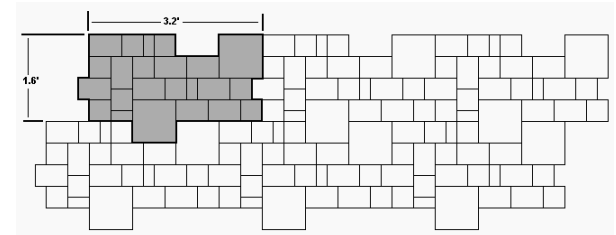


4. As there are no specific laying patterns for Venetian Random, the following are examples of what can be done.

Venetian Random

Venetian Random and Square

Random– 75%
Square– 25%

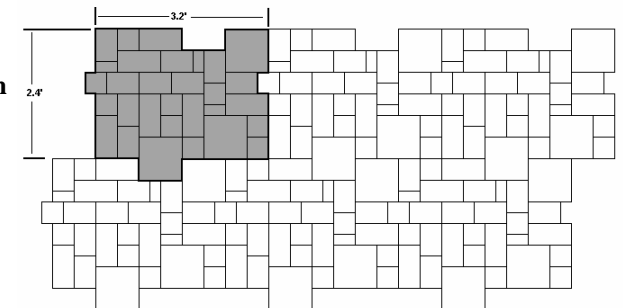


Venetian Random and Soldier

Random– 75%
Soldier– 25%

All Sizes of Venetian

Random– 50%
Soldier– 25%
Square– 25%



Venetian Circle/Venetian Classic Circle

(Bundle contains all five sizes)

Square Stone (SQ)

Length: 120 mm (4.8")

Width: 120 mm (4.8")

Thickness: 60 mm (2.36")

Small Wedge (SW)

Length: 90 mm (3.6")

Width: 120 mm (4.8")

Thickness: 60 mm (2.36")

Rectangular Stone (R)

Length: 90 mm (3.6")

Width: 120 mm (4.8")

Thickness: 60 mm (2.36")

Centre Stone (CS)

Diameter: 120 mm (4.8")

Thickness: 60 mm (2.36")

Large Wedge (LW)

Length: 130 mm (5.1")

Width: 120 mm (4.8")

Thickness: 60 mm (2.36")



ORDER INFORMATION

All Venetian Circle and Venetian Classic Circle material sold in full bundles only.

	Full Cube	Breakdown of cube				
		CS	LW	SW	R	SQ
Sq. Ft. per Bundle	61	-	-	-	-	-
Stones per Bundle	480	8 circles (16 halves)	32	192	144	104
Weight per Bundle	1677 lbs / 760 kg	-	-	-	-	-

INSTALLATION HELPFUL HINTS

The following helpful hints apply to the installation of Venetian Circles, and are to be used with the Paver Installation Instructions provided previously (Pages 8-11).

1. Circle packs should always be installed starting from the inside (centre stone) and working outwards.
2. When spreading bedding sand for centre of circle, only spread sand over large enough area to allow placement of stones without disturbing material. Spread additional bedding sand as circle progresses outwards.
3. When circle is completed, lay remaining area of project as per normal, taking extra care around circle to ensure lines are maintained. Leave cutting of final filler pieces directly around perimeter of circle to the end.
4. To prevent stones from spreading, do not compact circle into bedding sand until previous step is completed.

Note: there will be some gaps between stones because the circumference of each ring is different.

Note: Photos above are Venetian Circle. Venetian Classic Circle not shown.

ACCENT PLANTER

Use this Accent Planter to enhance any landscape project. The planter profile matches the Rosetta line of products.



12" x 48" x 30"
(305mm x 1219mm x 762mm)
3/pallet—2100 lbs.pallet

NEW FOR 2013!!!

SQUARE FIRE PIT

Enjoy the modern clean lines of this fire pit. It will fit any setting, especially those demanding a modern, linear look.

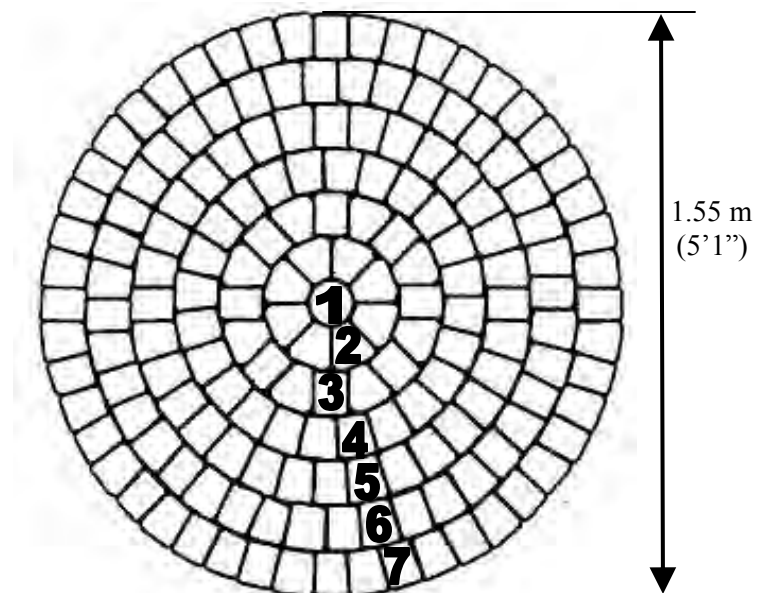


The Fire pit is made of Dimensional Straight Units:

Requires: 36 pieces to complete the fire pit as seen above.
The steel insert is also available from Brown's Concrete.

CIRCLE DESIGN CHART

The Venetian Circle bundle can make up to one 2.51 m (8'3") diameter circle or up to two 1.55 m (5'1") diameter circles.



For each 1.55 m (5'1") diameter circle, follow this laying pattern.

Ring	Number of pieces in ring					DETAILS
	CS	LW	SW	R	SQ	
1	2					
2		8				
3		8		7	1	Alternate LW and R, finish with SQ.
4			20		3	Place SQ after every 7 SW.
5			20	7	4	SW,SW,SW,R,SW,SW,SW,R,SQ- repeat.
6			24	17		SW,SW,R,SW,R,SW,SW,R- repeat.
7			24	24	1	Alternate SW and R, finish with SQ.
Total	2	16	88	55	9	
TOTAL x2	4	32	176	110	18	

For a 2.51 m (8'3") circle, add rings 8 through 11 as follows.

Ring	CS	LW	SW	R	SQ	DETAILS
8			24	31	2	SW,R,SW,R,SW,R,R- repeat. Place SQ at top and bottom of circle (180° apart).
9			24	40		R,R,SW,R,R,SW,R,SW- repeat.
10			32		31	Alternate SW and SQ stones.
11			22		45	SQ,SQ,SW,SQ,SQ,SW- repeat.
TOTAL	2	16	190	126	87	

Belgium / Belgium Classic



Belgium 6x6



Length: 150 mm (5.9")

Width: 150 mm (5.9")

Thickness: 60 mm (2.36")

Length: 75 mm (2.95")

Width: 150 mm (5.9")

Thickness: 60 mm (2.36")

Belgium 6x6 shipped in full bundles only. Individual sections available at plant only.

Belgium 6x6 Classic sold in full bundles only.

	Full Bundle	Break up of Bundle	
		6x6 pcs.	3x6 pcs.
Sq. Ft. per Bundle	117.2	114.8	2.5
Stones per Sq. Ft.	4.26 (bundle average)	4.18	8.3
Stones per Bundle	500	480	20
Sections per Bundle	7	-	-
Stones per Section	70 (80 in one section)	70 (60 in one section)	All 20 in one section
Sq. Ft. per Section	16.7	14.2	2.5 in one section
Ln. Ft. per Bundle	236 (full stones only)	236	NA
Ln. Ft. per Section	33.7 (29.5 in one section)	33.7 (29.5 in one section)	NA
Weight per Bundle	3220 lb / 1464 kg	-	-

Belgium 6x9

Length: 225 mm (8.9")

Width: 150 mm (5.9")

Thickness: 60 mm (2.36")



Belgium 6x9 shipped in full bundles only. Individual sections available at plant only.

Belgium 6x9 Classic sold in full bundles only.

	Full Bundle
Sq. Ft. per Bundle	105
Stones per Sq. Ft.	2.67
Stones per Bundle	280
Sections per Bundle	7
Stones per Section	40
Sq. Ft. per Section	15
Ln. Ft. per Bdl (Soldier)	165.2
Ln. Ft. per Sct (Soldier)	23.6
Weight per Bundle	2889 lb / 1310 kg

DIMENSIONAL WEDGE FIRE PIT

A simple and compact fire pit for any size yard.



Using the Dimensional Wall Wedge pieces create a fire pit any height!

Fire Pit consists of 10 Dimensional Wall units per row.

GARDEN BENCH

Having a well-deserved break on a beautiful bench in a peaceful garden or backyard oasis.....Perfect!
Use a Rosetta 4' step or a Random step for this application.
The Garden Bench can make it happen.



Seen here with the Belvedere Fire Pit Kit. The Garden Bench can be created using any of our Random steps or the 4' Dimensional step.
Note: This kit is not pre-packaged.



Belgium 9x9

Length: 225 mm (8.9")
Width: 225 mm (8.9")
Thickness: 60 mm (2.36")

Sq. Ft. per Bundle	113
Stones per Sq. Ft.	1.78
Stones per Bundle	200
Sections per Bundle	5
Stones per Section	40
Sq. Ft. per Section	22.5
Ln. Ft. per Bundle	148
Ln. Ft. per Section	29.6
Weight per Bundle	3108 lb / 1410 kg

Belgium 9x9 shipped in full bundles only. Individual sections available at plant only.
Belgium 9x9 Classic sold in full bundles only.

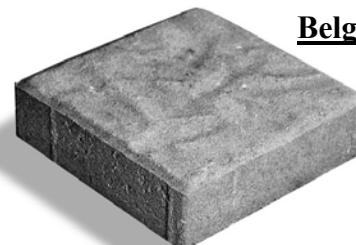


Belgium 6x12

Length: 300 mm (11.8")
Width: 150 mm (5.9")
Thickness: 60 mm (2.36")

Sq. Ft. per Bundle	124
Stones per Sq. Ft.	2.04
Stones per Bundle	252
Sections per Bundle	4
Stones per Section	63
Sq. Ft. per Section	31
Ln. Ft. per Bundle (Soldier Course)	123.9
Ln. Ft. per Section (Soldier Course)	31
Weight per Bundle	3410 lb / 1546 kg

Belgium 6x12 shipped in full bundles only. Individual sections available at plant only.
Belgium 6x12 Classic not available at this time.
Belgium 6x12 not recommended for heavy vehicle applications.



Belgium 12x12

Length: 300 mm (11.8")
Width: 300 mm (11.8")
Thickness: 60 mm (2.36")

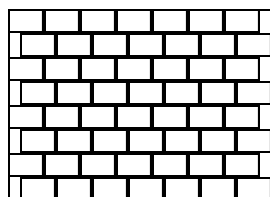
Sq. Ft. per Bundle	117
Stones per Sq. Ft.	1.03
Stones per Bundle	120
Sections per Bundle	4
Stones per Section	30
Sq. Ft. per Section	29.3
Ln. Ft. per Bundle	118.5
Ln. Ft. per Section	29.6
Weight per Bundle	3218 lb / 1459 kg

Belgium 12x12 shipped in full bundles only. Individual sections available at plant only.
Belgium 12x12 Classic not available at this time.
Belgium 12x12 not recommended for heavy vehicle applications.

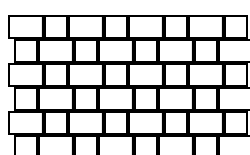
Photos above are Belgium. Belgium Classic not shown.

Laying Patterns for Belgium Lines

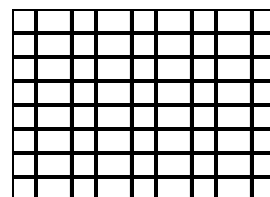
1. Belgium 6x12 can be used to create all the general laying patterns shown for Nordic / Nordic Classic on Page 12.
2. Each of Belgium 6x6, Belgium 9x9 and Belgium 12x12 can be used to create all the general laying patterns shown for Nordic Square on Page 13.
3. Belgium 6x12 combined with Belgium 12x12 can be used to create all the alternate laying patterns shown on Page 13.



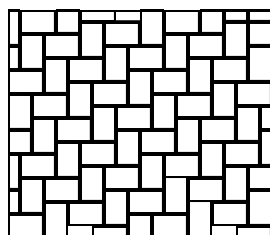
Runner Bond



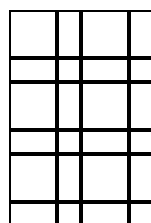
Combined Runner Bond
40% 6x6, 60% 6x9



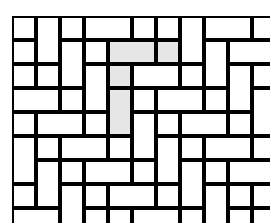
Combined Stack
40% 6x6, 60% 6x9



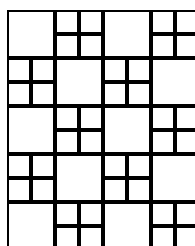
6x9 Herringbone



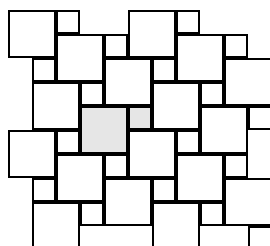
12% 6x6, 44% 6x12
44% 12x12



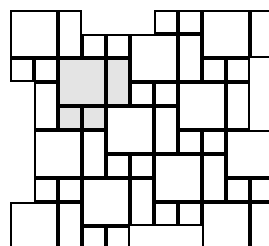
Combined Herringbone
33% 6x6, 67% 6x12



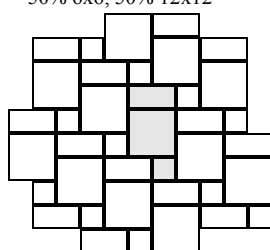
50% 6x6, 50% 12x12



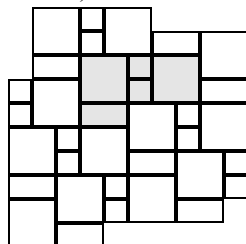
20% 6x6, 80% 12x12



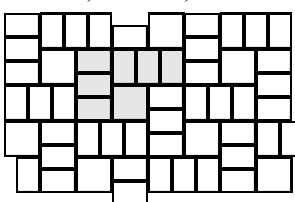
25% 6x6, 25% 6x12, 50% 12x12



14% 6x6, 29% 6x12,
57% 12x12



17% 6x6, 17% 6x12,
66% 12x12
22



80% 6x9, 20% 9x9

“AURORA” INUKSHUK

Create that truly Canadian garden with the “Aurora” Inukshuk.
Natural-Stone look and a quick assembly
make this an ideal accent.



The Aurora Inukshuk is made of Belvedere units:

2—18” x 3”
2—18” x 6”
1—12” x 3”
1—12” x 6”
2—6” x 3”
2—6” x 6”

BELVEDERE FIRE PIT



Natural Stone Texture

Everything on a single pallet

FAST installation, no waste.

Weight: 1275 lbs.

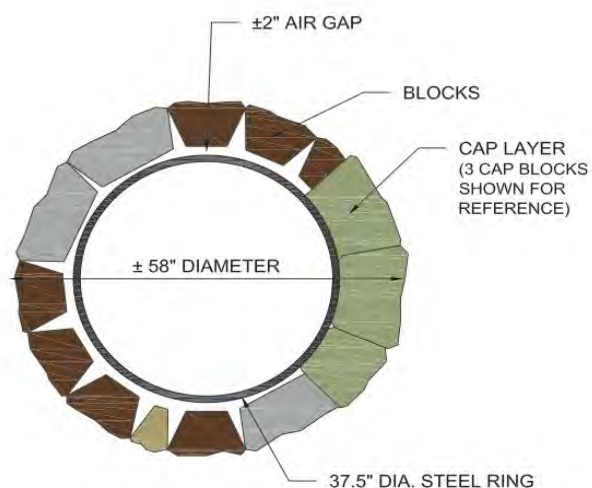
Outside Diameter: +/- 58".

Inside Diameter: +/- 37.5"

Finished Height: +/- 14.25" above base.

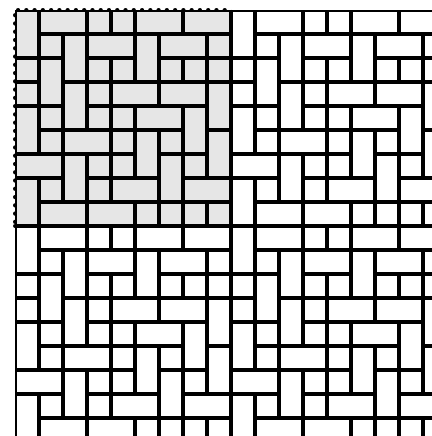
Includes custom steel ring.

Available in all Rosetta colors.

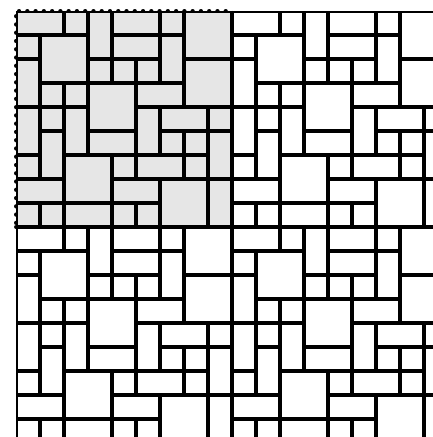


TOP VIEW

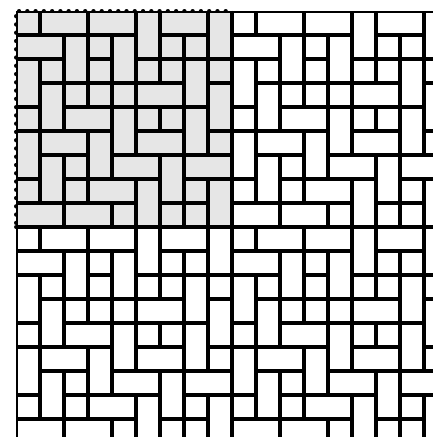
See Rosetta Sell Sheet for Complete Installation Instruction.



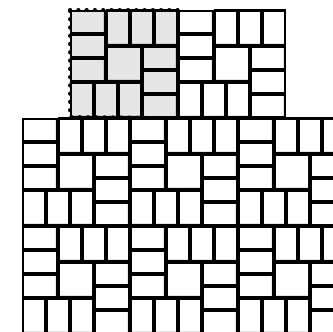
27% 6x6, 63% 6x12



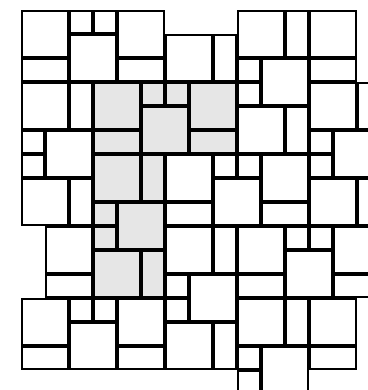
23% 6x6, 47% 6x12, 30% 12x12



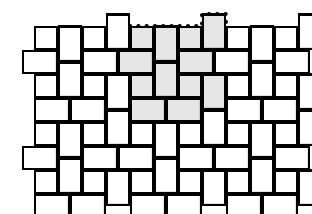
27% 6x6, 63% 6x12



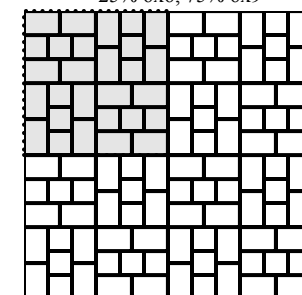
89% 6x9, 11% 9x9
(staggered (top 2 rows) or in line (bottom 2))



11% 6x6, 22% 6x12, 67% 12x12



25% 6x6, 75% 6x9



33% 6x6, 67% 6x9

Appian Stone

Appian Stone is a large scale paver with a gently rolling texture reflective of natural cut flag.



Small Rectangle
Length: 330mm (13")
Width: 165 mm (6.5")
Thickness: 70mm (2.76")



Square
Length: 330mm (13")
Width: 330 mm (13")
Thickness: 70mm (2.76")



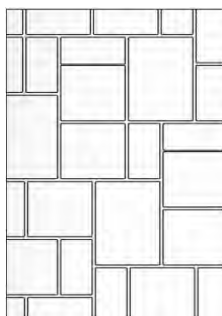
Large Rectangle
Length: 495mm (19.5")
Width: 330 mm (13")
Thickness: 70mm (2.76")

Sold in full bundles only. Individual layers sold at Sudbury yard only.

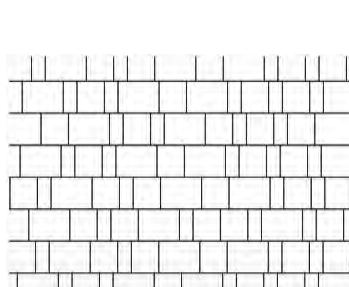
	Full Cube	Large Rec.	Square	Small Rec.
Sq. Ft. / Bundle	95.6	32.5	42.1	21
Stones per Sq. Ft.	-	0.56	0.85	1.7
Stones per Bundle	90	18	36	36
Weight per Bundle	3250 lb/1477 kg	-	-	-

Laying Patterns for Appian Stone

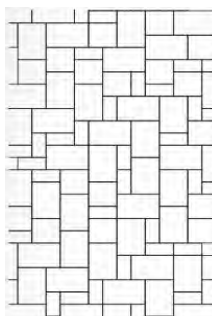
These are some examples of possible laying patterns for Appian Stone. Other patterns are possible depending on quantities of product being used.



Random Pattern



Linear Pattern



Modular Pattern

ROSETTA GRILL ISLAND



This kit includes all concrete block units, countertops, instructions and adhesives. It does not include accessories or appliances. Reference numbers are available for appliances that fit this kit.

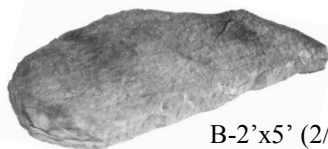
NEW FOR 2013!!!

ROSETTA STEPS AND ACCENTS

RANDOM STEP COLLECTION - 7" rise, 3195 lbs (1452 kg)



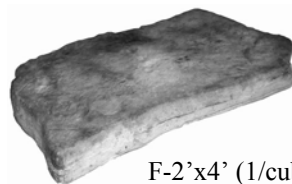
A-1'10"x4'6" (2/cube)



B-2'x5' (2/cube)



D-2'4"x4' (1/cube)



F-2'x4' (1/cube)

4' DIMENSIONAL STEPS



48" x 18" x 7"
129mm x 458mm x 178mm
6/pallet 3060 lbs (1391 kgs)



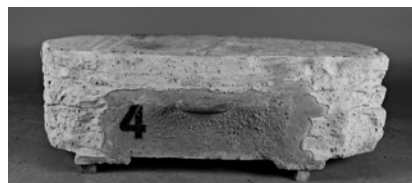
72" x 30" x 7"
(1,829 x 762 x 178 mm)
3/pallet -3,960 lbs (1,800 kg)

ACCENT BLOCKS



12"x48"x30"
(305 x 1,219 x 762 mm)
3/pallet -3,510 lbs (1,595 kg)

CORNER BLOCKS



Comes in the A Pallet format but with a finished back (as shown) on each piece.

Old Mission Paver

Old Mission Paver is wet cast paver that is the closest reflection of natural cobble walkways and roads of years gone by.



9 x 12 Paver
11-15/16" x 8-1/2" x 2-3/4"
303.2mm x 215.9mm x 70mm



9 x 9 Paver
8-1/2" x 8-1/2" x 2-3/4"
215.9mm x 215.9mm x 70mm



6 x 9 Paver
8-1/2" x 5-11/16" x 2-3/4"
215.9mm x 150.8mm x 70mm

Sold in full bundles only. Individual layers sold at Sudbury yard only.

ASHLAR PALLET

	Full Cube	9 x 12	9 x 9	6 x 9
Sq. Ft./Bundle	112.5	60	22.5	30
Stones/Bundle	200	80	40	80
Stones/Sq.Ft	2	1.33	1.78	2.67
Weight/Bundle	3050 lb/1384 kg	-	-	-

COBBLE PALLET

	6 x 9
Sq Ft./Bundle	105
Stones/Bundle	280
Stones/Sq Ft.	2.67
Weight/Bundle	2790 lb/1266 kg

NEW FOR 2013!!!

Adora Antico (from Bestway)

Bundle comes with all four sizes.

Large Rectangle

Length: 270 mm (10.63")
Width: 205 mm (8")
Thickness: 60 mm (2.36")

Medium Rectangle

Length: 270 mm (10.63")
Width: 135 mm (5.32")
Thickness: 60 mm (2.36")

Small Rectangle

Length: 205 mm (8")
Width: 135 mm (5.32")
Thickness: 60 mm (2.36")

Square

Length: 135 mm (5.32")
Width: 135 mm (5.32")
Thickness: 60 mm (2.36")

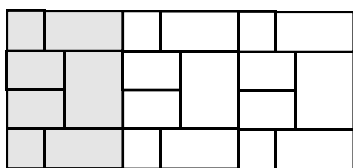
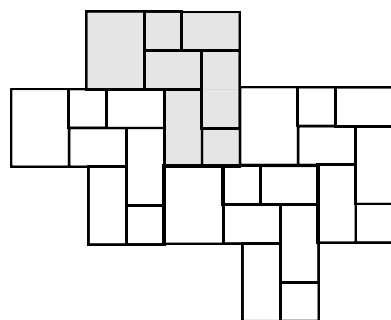
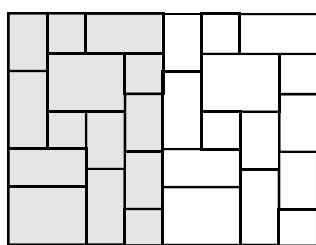
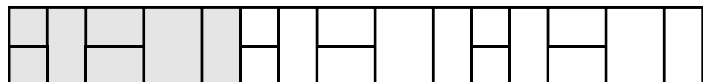


All Adora products sold in full bundles only.

	Full Cube	Large Rec.	Med. Rec.	Small Rec.	Square
Sq. Ft. per Bundle	88	21.8	29.3	22.1	14.8
Stones per Sq. Ft.	-	1.65	2.46	3.26	4.86
Stones per Bundle	252	36	72	72	72
Weight per Bundle	2464 lb/1120 kg	-	-	-	-

Laying Patterns for Adora Antico

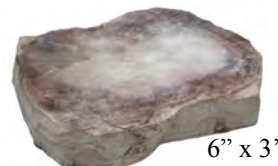
As there are no specific laying patterns for these stones, the following are examples of what can be done using the relative amount of stones per bundle.



FREESTANDING OUTCROPPING

Pallet G Contents

Pallet G contains 10.5 square feet face front of product



12" x 3'



12" x 6'

Pallet H Contents

Pallet H contains 11 square feet face front of product



12" x 4'



6" x 4'



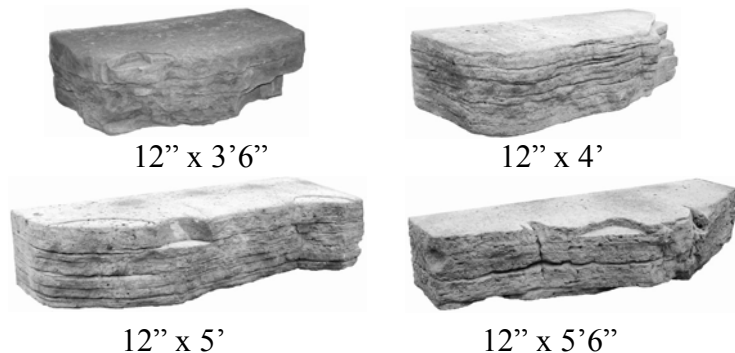
12" x 5'

SEE THE OUTCROPPING
TECHNICAL GUIDE FOR
DESIGN AND CONSTRUCTION
DETAILS

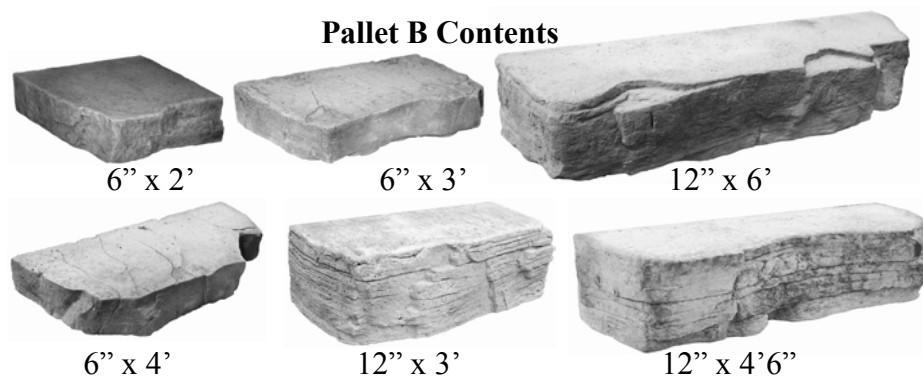
NEW FOR 2013!!!

OUTCROPPING

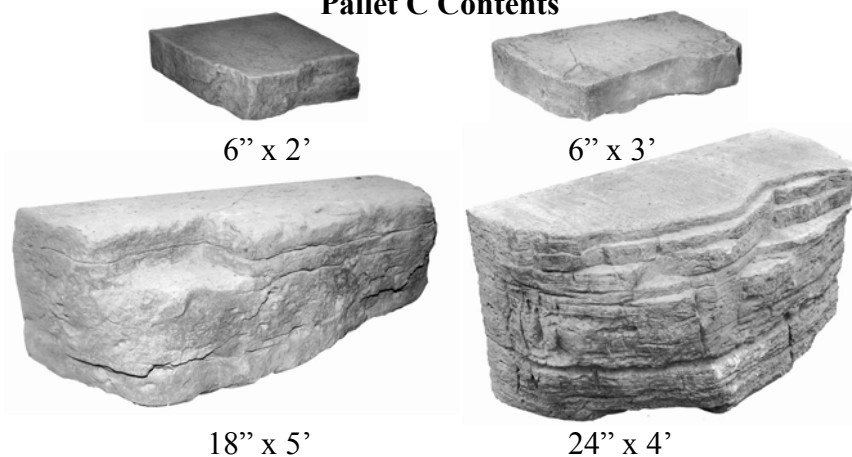
Pallet A Contents



Pallet B Contents



Pallet C Contents



Note: Each pallet contains 18 square feet face front of product.

Bellagio Antico (from Bestway)

Bellagio Antico comes in three sizes, each being packaged separately.



Bellagio 380

Length: 380 mm (14.96")
Width: 285 mm (11.22")
Thickness: 70 mm (2.75")

Bellagio 285

Length: 285 mm (11.22")
Width: 190 mm (7.48")
Thickness: 70 mm (2.75")

Bellagio 190

Length: 190 mm (7.48")
Width: 190 mm (7.48")
Thickness: 70 mm (2.75")

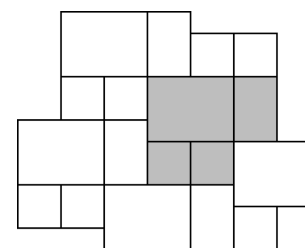
All Bellagio products sold in full bundles only.

Being a 70 mm thick paver, it is ideal for heavy vehicle applications.

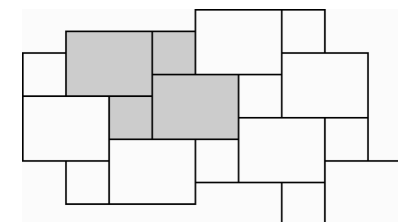
	Bellagio 380	Bellagio 285	Bellagio 190
Sq. Ft. per Bundle	86	96	97
Stones per Sq. Ft.	0.87	1.75	2.56
Stones per Bundle	72	160	240
Weight per Bundle	2924	3264	3298

Laying Patterns for Bellagio Antico

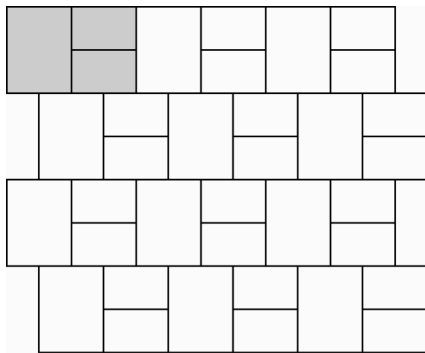
1. Bellagio 190 can be used to create all the general laying patterns shown for Nordic Square on Page 13.
2. As there are no specific laying patterns for these stones, the following are examples of what can be done.



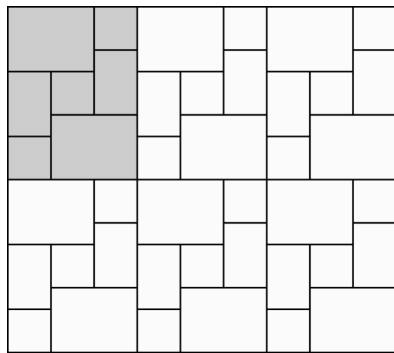
#1- 46 % Large (380),
23% Medium (285)
31% Small (190)



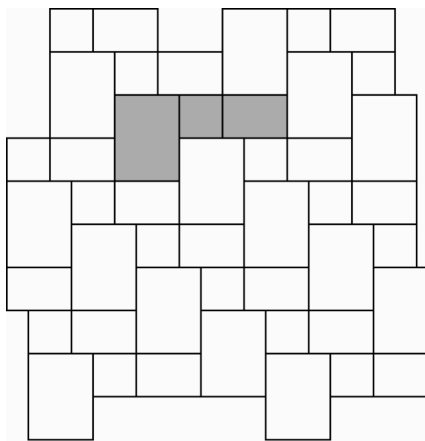
#2- 75 % Large (380),
25% Small (190)



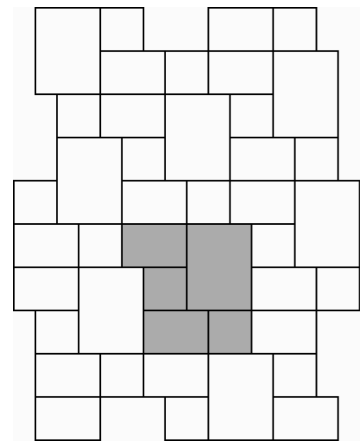
#3- 50% Large (380), 50% Medium (285)



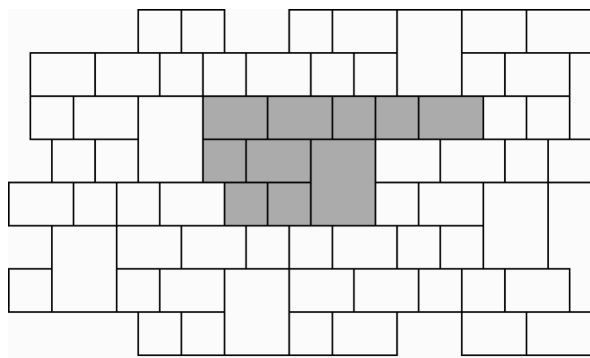
#4- 50% Large (380), 25% Medium (285)
25% Small (190)



#5- 54% Large (380), 27% Medium (285)
19% Small (190)



#6- 37% Large (380), 37% Medium (285)
26% Small (190)



#7- 21% Large (380), 43% Medium (285), 36% Small (190)

NORTHFACE-SERVIAN WALL SYSTEM

FULL SIZE UNIT



457mm high x 1829 wide x
610mm deep.
(18" high x 72" wide x 24" deep)
9 sq ft/Unit
Weight - 2300lbs (1045 kg) solid
1800 lbs (828 kg) cored

HALF SIZE UNIT

457mm high x 914mm wide x
610mm deep.
(18" high x 36" wide x 24" deep)
4.5 sq ft/unit
Weight - 1150 lbs (523 kg) solid
900 lbs (409 kg) cored



Available as Cored or Solid Units

These units come with two integral and inset lifting hooks for ease of installation.

Also available without hooks for a finished top (**Special Order**)

Note: The 6' Dimensional Step (pg 61) is used for the coping on this wall system along with a 3' coping unit.

Engineered 3 courses high

GRANDE WALL (from Navascape)



Grande 438 Coping Unit

Length: 1000 mm (39.375")
Height: 200mm (7.875")
Depth: 438 mm (17.25")



Grande 375

Length: 1000 mm (39.375")
Height: 200mm (7.875")
Depth: 375 mm (14.76")



Grande 750/375

Length: 1000 mm (39.375")
Height: 200mm (7.875")
Depth: 750 mm (29.52")



Grande 1125/375

Length: 1000 mm (39.375")
Height: 200mm (7.875")
Depth: 1125 mm (44.29")



Grande Wedge 100 Solid (Coping)

Length: 380 mm (14.96")
250 mm (10") at back
Height: 100 mm (3.94")
Depth: 312.5 mm (12.3")



Grande Wedge 200 Standard

Length: 380 mm (14.96")
250 mm (10") at back
Height: 200 mm (7.87")
Depth: 312.5 mm (12.3")

	438	375	750	1125	100	200
Pcs/Bdl	6	9	3-750 3-375	3	63	36
Pcs/Sq.Ft.	-	0.46	0.46	0.46	-	1.22 to 1.47
Pcs/Lin.Ft.	0.304	-	-	-	0.97	-
Sq.Ft./Bdl	-	19.38	12.92	6.46	-	24.5 to 29.5
Lin.Ft./Bdl	19.69	-	-	-	65.1	-
Bdl Weight	2814 lb 1279 kg	3195 lb 1452 kg	3195 lb 1452 kg	3195 lb 1452 kg	2933 lb 1333 kg	2985 lb 1357 kg

Strada Antico (from Bestway)

Strada Antico comes in four sizes, each being packaged separately.

Jumbo

Length: 350 mm (13.78")
Width: 261 mm (10.28")
Thickness: 70 mm (2.75")

Large

Length: 208 mm (8.19")
Width: 175 mm (6.88")
Thickness: 70 mm (2.75")

Medium

Length: 175 mm (6.88")
Width: 156 mm (6.14")
Thickness: 70 mm (2.75")

Small

Length: 175 mm (6.88")
Width: 105 mm (4.13")
Thickness: 70 mm (2.75")

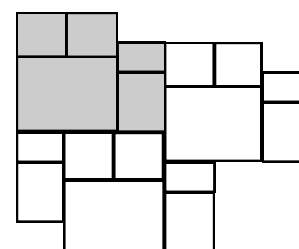


All Strada Antico products sold in full bundles only.

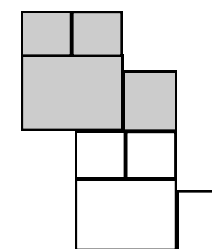
Being a 70 mm thick paver, it is ideal for heavy vehicle applications.

	Jumbo	Large	Medium	Small
Sq. Ft. per Bundle	72.3	80.8	85.2	79.3
Stones per Sq. Ft.	1	2.48	3.29	4.84
Stones per Bundle	72	200	280	384
Weight per Bundle	2386 lb/1085 kg	2666 lb/1211 kg	2812 lb/1278 kg	2617 lb/1190 kg

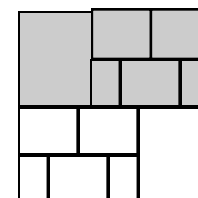
General Laying Patterns for Strada Antico



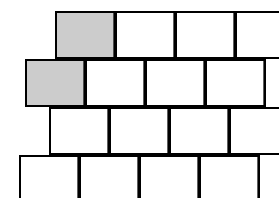
Jumbo 46%, Large 18%
Medium 27%, Small 9%



Jumbo 50%, Large 20%
Medium 30%



Jumbo 39%, Large 46%
Small 15%



Large 100%

Ardesia (from Bestway)



Shown here is eight of the twenty three different textures available in each bundle.

Length: 490 mm (19.29")

Width: 265 mm (10.41")

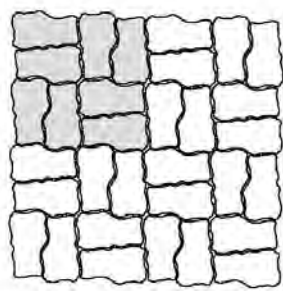
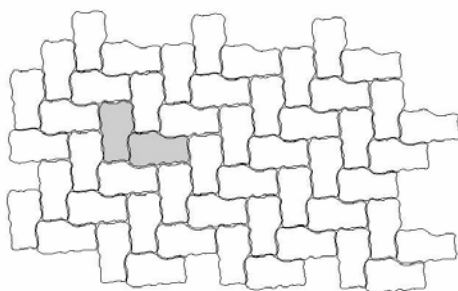
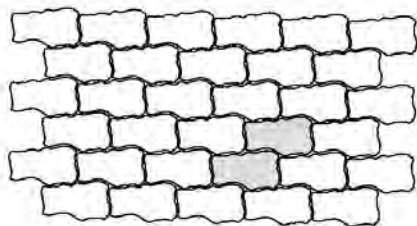
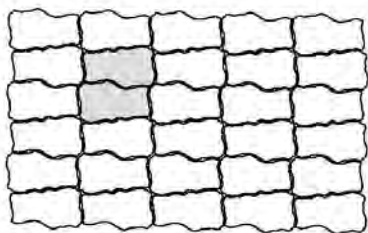
Thickness: 70 mm (2.75")

ORDER INFORMATION

Product sold in full bundles only.

Sq. Ft. per Bundle	76.2
Stones per Sq. Ft.	0.84
Stones per Bundle	64
Weight per Bundle	2591 lb / 1178 kg

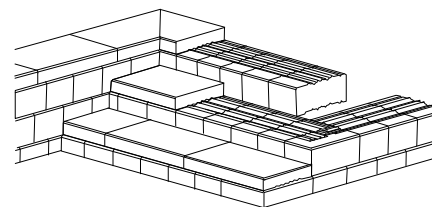
GENERAL LAYING PATTERNS



BUILDING STEPS WITH PARKWALL/PARKWALL CLASSIC

When constructing steps, Parkwall/Parkwall Classic Standard units are used for the risers and side walls, while 12" Cap Stone are used for the treads. Standard Units are recommended in lieu of backfill below risers. Using Pisa Light® for steps is not recommended.

PERPENDICULAR STEPS

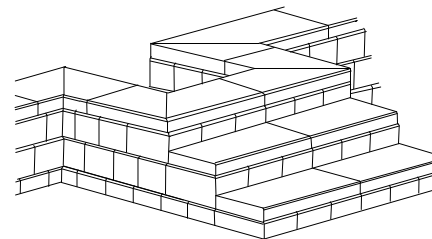


This is simply a series of inside and outside corners, with the cross wall (riser) being stepped back 300mm (12") per course.

For each course, construct the inside and outside corners (see page 51), and then place the necessary units in between. Position the coping units and secure with adhesive.

The next course is placed with the front face of the riser units touching the back of the coping stone on the lower step. Some trimming of the interlock ridges on the outside corner will be necessary.

OUTSIDE STEPS

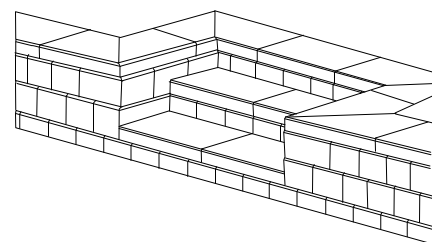


First, assemble two outside corners and two inside corners for the bottom course. At the outside corners, chop part of the interlock ridges off the corner units and position/secure the coping. Fill in with aggregate or additional standard units.

Place the next riser in contact with the back of the coping unit for the previous riser. Some chopping will again be necessary on the corner units.

When constructing vertical side wall steps against a setback retaining wall, remember to adjust the layout of the inside (back) corners to account for the difference in wall slopes.

INSET STEPS

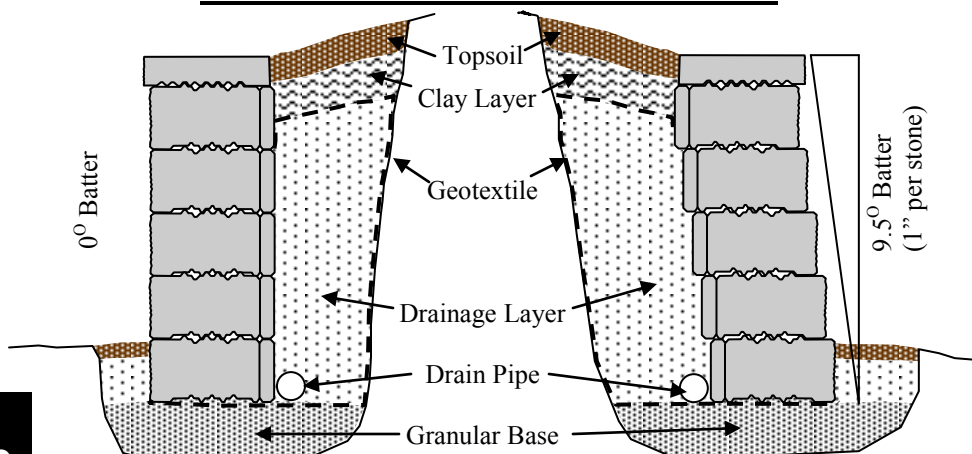


First, assemble the two outside corners and sidewalls, with a distance of one riser length in between. For setback retaining walls, see the previous instructions.

Place the first riser and associated filler units on the same foundation elevation as the side walls. Position and secure the coping. The next course

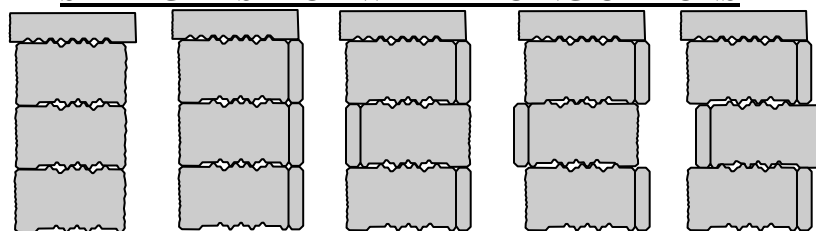
is placed with the front face of the riser units touching the back of the coping stone on the lower step.

RETAINING WALL FACING OPTIONS



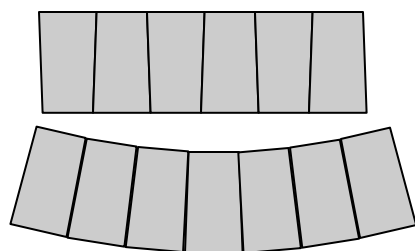
Note: with the Parkwall system, both the split face and/or the smooth face can be used on the exposed side.

STRAIGHT STACK WALL FACING OPTIONS



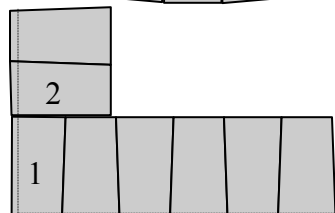
Double Split Single Split Alternating Split Inset/Outset Options

WEDGE CAP INSTALLATION



Placing the units in an alternating pattern creates a straight section.

By placing units with the wide face positioned the same way, curves can easily be laid out. The minimum curve is 2.4m (8'). Radii of greater than or less than 2.4m (8') will require cutting to achieve a tight fitting cap.



90° corners can easily be created using two closed end Wedge Caps (there is one closed end unit per layer of Wedge Cap units). To allow Unit 2 to sit flat, the interlocking ridges on the underlying Standard Unit (directly below the closed end portion of the Wedge Cap) need to be knocked off.

Moderna (from Bestway)



Shown here is eight of the twenty three different textures available in each bundle.

Length: 405 mm (16")

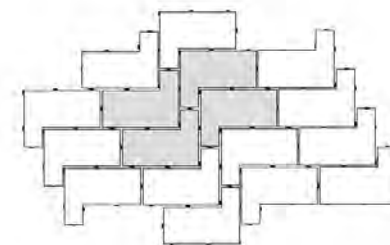
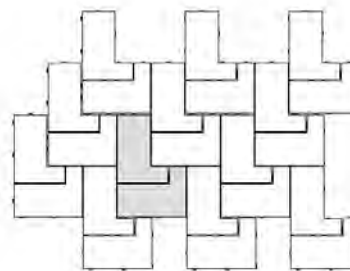
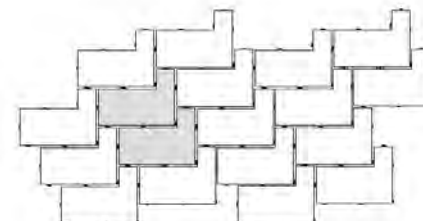
Width: 305 mm (12")

Thickness: 70 mm (2.75")

ORDER INFORMATION
Product sold in full bundles only.

Sq. Ft. per Bundle	62
Stones per Sq. Ft.	1.03
Stones per Bundle	64
Ln. Ft./Bdl. (Soldier Course)	47
Weight per Bundle	2108 lb / 958 kg

GENERAL LAYING PATTERNS



Pathway (from Bestway)

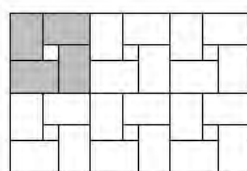
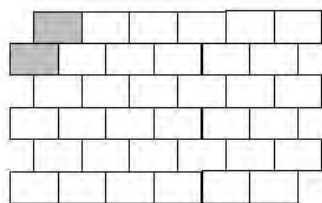
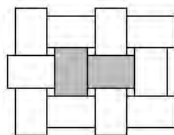
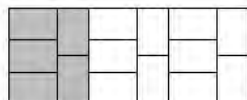


Length: 203 mm (8")
Width: 135 mm (5.32")
Thickness: 60 mm (2.36")

Sq. Ft. per Bundle	83
Stones per Sq. Ft.	3.38
Stones per Bundle	270
Ln. Ft. /Bdl. (Soldier Course)	119.7
Weight per Bundle	2324 lb / 1056 kg

ORDER INFORMATION
Product sold in full bundles only.

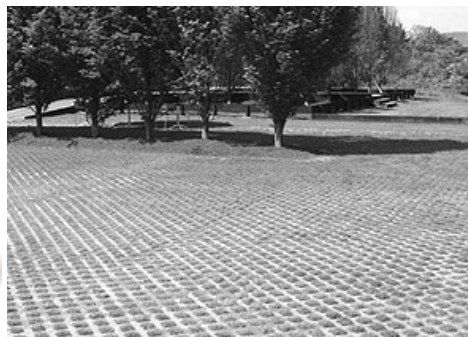
GENERAL LAYING PATTERNS



Turfstone (from Navascape)

Turfstone has long been a favorite of landscape architects and engineers for areas requiring a "supported turf". It's attractive "filigree" design makes it an attractive and permanent solution for emergency access areas, embankments, spillways, and environmentally sensitive parking areas. Turfstone has the option of being filled with grass or aggregates depending on the project's drainage requirements.

Length: 600 mm (23.63")
Width: 400 mm (15.75")
Thickness: 80 mm (3.15") or
100 mm (3.93")



Retaining and straight wall facing options are presented on Page 56. The minimum radius for curves is 2.4 m (8 ft). See page 52.

For corner construction, see page 51.

Parkwall / Parkwall Classic Corners can be used to create pillars as shown on Page 53.

For 12" Cap installation, see Page 53 (same as 9" Cap Stone).

For Wedge Cap installation, see Page 56.

To construct steps with Parkwall or Parkwall Classic, see Page 57.

ORDER INFORMATION

Standard, Taper, 12" Cap and Wedge Cap units sold individually. Corners sold in pairs. For delivery, part cubes will be shrink wrapped.

	Standard Unit	Taper Unit	Corner Unit	12" Cap	Wedge Cap
Sq. Ft. per Bundle	19.3	19.3	22	13.5	19
Pieces per Bundle	60	60	28	28	126
Pieces per Sq. Ft.	3.1	3.1	1.27	2.07	6.6
Pieces per Lin. Ft.	1.52	1.52	0.625	0.51	1.63
Lin. Ft. per Bundle	39.35	39.35	44.8	55.1	77.5
Weight of Bundle	2580 lb/ 1173 kg	2460 lb/ 1119 kg	1204 lb 548 kg	1932 kg/ 878 lb	2898 kg/ 1318 lb



PARKWALL® / PARKWALL® CLASSIC

PARKWALL®



Standard Unit

Length: 200 mm (7.87")
Height: 150mm (5.9")
Depth: 295 mm (11.61")

PARKWALL® CLASSIC



Taper Unit



Length: 200 mm (7.87")
175 mm (6.89") at back
Height: 150mm (5.9")
Depth: 295 mm (11.61")



Corner Units

(sold in pairs)



Length: 295 mm (11.61")
Height: 150mm (5.9")
Depth: 193 mm (7.59")



12" Cap



Length: 600 mm (23.6")
Height: 75mm (2.95")
Depth: 300 mm (11.81")



Wedge Cap

Length: 200 mm (7.87")
175 mm (6.89") at back
Height: 75 mm (2.95")
Depth: 325 mm (12.79")



INSTALLATION DETAILS

The maximum exposed (above grade) height for a gravity wall with standard 9.5° batter is 975 mm (38.4"). This includes a 75 mm (2.95" cap) and 6 exposed courses, and requires one additional buried course. With geogrid, the maximum wall height is 3.375 m (11.1 ft).

The maximum exposed (above grade) height for a gravity wall with no batter is 675 mm (26.6"). This includes a 75 mm (2.95" cap) and 4 exposed courses, and requires one additional buried course. With geogrid, the maximum vertical wall height is 2.175 m (7.1 ft).

Corso (from Bestway)



9.96" x 5.24" x 2.75"
253mm x 133mm x 70mm



7.60" x 5.24" x 2.75"
193mm x 133mm x 70mm



5.24" x 5.24" x 2.75"
133mm x 133mm x 70mm

Weight/skid	3196 lbs (1450 kg)
Weight/square foot	34 lbs (15.4 kg)
Sqft/skid	99
Square Meter/skid	8.74
Linear ft/skid	214
Linear meter/skid	65
Stones/skid	332 (112 each size)

Borollo (from Bestway)

ROUND EDGE COPING

9.84" x 12.46" x 2.95"
250mm x 317mm x 75mm



Weight/skid	2554 lbs (2258.5 kg)
Weight/piece	25.8 lbs (11.7 kg)
Pcs/skid	99
Pcs/Linear ft	1.22
Pcs/meter	0.25
Linear ft/skid	81.22
Linear meter/skid	24.7

AquaPave Permeable Paver System

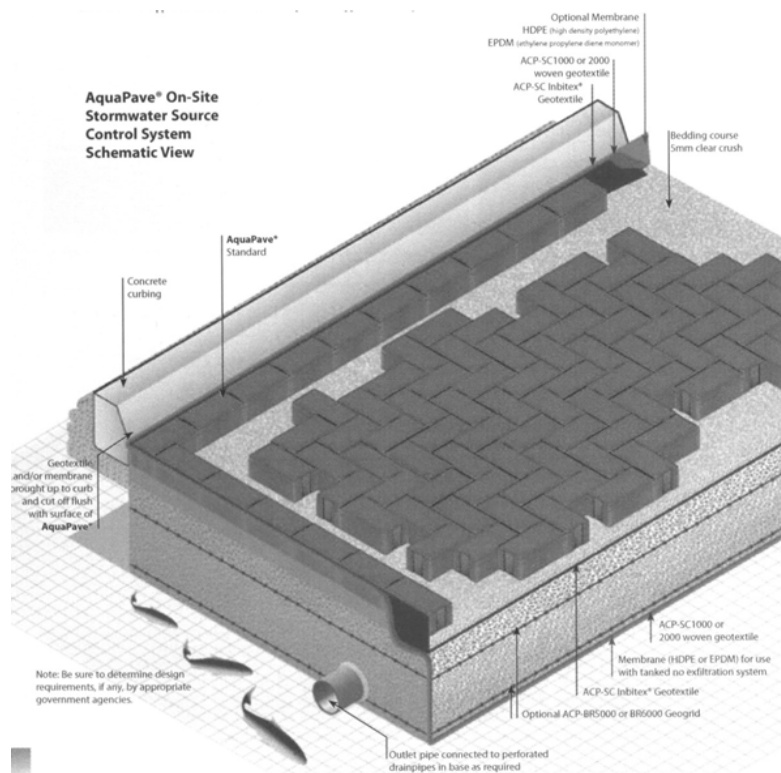


Length: 200 mm (7.9")
Width: 100 mm (3.9")
Thickness: 80 mm (3.15")

Sq. Ft. per Bundle	73.5
Stones per Sq. Ft.	4.57
Stones per Bundle	336 (8 rows)
Weight per Bundle	2690 lb / 1223 kg

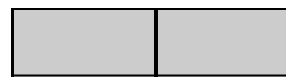
Permeable pavement systems couple the aesthetic and structural benefits of interlock with a specifically designed subgrade that provides for onsite stormwater management. Depending on the type of native soil, the water is either temporarily stored within the subgrade to reduce downstream erosion, or allowed to infiltrate back into the ground.

Permeable pavers are specifically designed to allow the surface water to drain down between them and into the subgrade. The AquaPave System is exclusively available in Northern Ontario through Brown's Concrete.

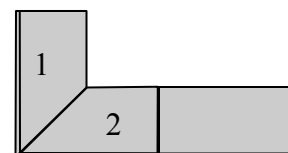


COPING INSTALLATION -PISA LIGHT® 9" CAP STONE

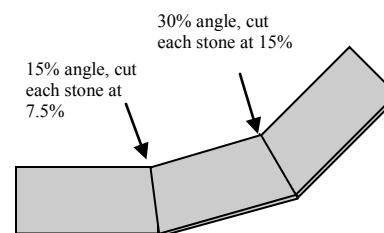
(Note: Same methods apply to Parkwall 12" Cap)



Place units tight against one another for straight walls.



For 90° corners, it is recommended that both units 1 and 2 be mitred at 45° so that the split front face is continuous, and the tongue and groove is hidden.



For gradual curves, units can be cut as required. Again, it is recommended that both units be mitred at 1/2 the total angle so that the units sit flush together.

PILLARS USING PISA LIGHT® CORNERS

(Note: Same methods apply to Parkwall Corner Units)



For smaller pillars, start by placing 4 corner units together (all same type) to create a square. For larger pillars, place Pisa Light Straight (Parkwall Straight) units between the corners.



For the second row, alternate the corner units (i.e. if the base course was composed of right corner units, left corner units are used for the second row).

Continue this method of alternating corner units per course until the desired pillar height is achieved. For added stability, sheets of biaxial Geogrid (Page 74) can be placed between layers.

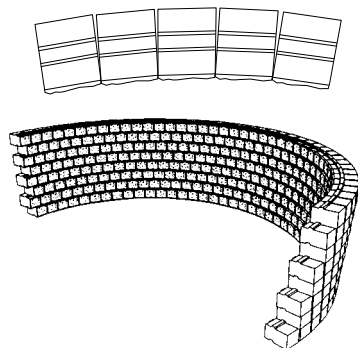
The pillar cap can either be made using 9" Cap Stones (Parkwall 12" Caps) cut to fit, or a pre-manufactured capstone as shown on Page 76.



BUILDING CURVES-PISA LIGHT®

(Note: Same methods apply to Parkwall and Parkwall Classic)

INSIDE Concave) CURVES



Standard units are typically used to construct inside curves. The front faces of the units are placed tightly together while small spaces are left between the back of the units.

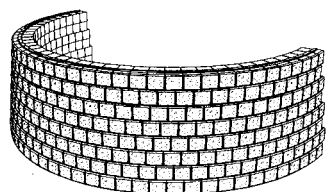
The minimum inside radius is 2.4 m (8 ft). Smaller inside radii would require cutting.

The minimum radii would occur at the bottom row. For Pisa Light, the radius will increase 19mm (3/4") for each course added due to the wall's natural batter. For Parkwall, the increase is 25mm (1") per course. With curves, the joints begin to line up because of the natural batter: a cut (half) unit can be used to re-establish the running bond.

OUTSIDE (Convex) CURVES



Taper units are used to construct outside curves. For smooth flowing curves, place all units tapered on the left side on one course, and all units tapered on the right side on the next course.



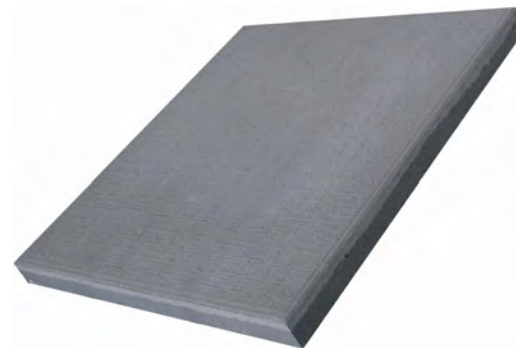
The minimum outside radius is 2.4 m (8 ft). Smaller outside radii would require cutting.

Because the radius decreases with each course, the minimum radius would occur at the top row. The radius of the bottom row needs to be adjusted 19mm (3/4") for each additional row with Pisa Light, or 25mm (1") for each additional row with Parkwall.

When laying all but the top row (if at the minimum radii), the front faces are placed tightly together while small spaces are left between the back of the units. The top row would then be placed flush from front to back of the unit.

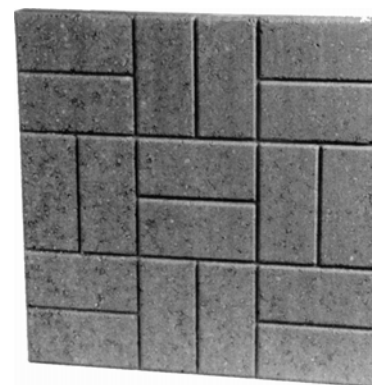
Patio Slabs (from Bestway)

BASKETWEAVE



	Dimensions	Units/ Bundle	Weight per piece	Weight per bundle
16 x 16	15.75x15.75x1.6" 400x400x40mm	50	34lb 15.5 kg	1700 lb 775 kg
24 x 24	23.62x23.62x1.6" 600x600x40mm	25	75 lb 34.1 kg	1875 lb 852.5 kg
24 x 30	23.62x29.52x1.6" 600x750x40mm	25	105 lb 47.7 kg	2625 lb 1193 kg

STANDARD PRESS



	Dimensions	Units/ Bundle	Weight per piece	Weight per bundle
Standard Press	23.62x23.62x1.6" 600x600x40mm	25	75 lb 34.1 kg	1875 lb 852.5 kg

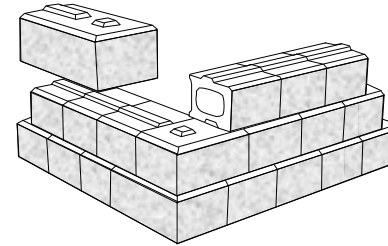
Patio Slabs (from Bestway)

FLAGSTONE



	Dimensions	Units/ Bundle	Weight per piece	Weight per bundle
Standard Press	23.62x23.62x1.6" 600x600x40mm	25	75 lb 34.1 kg	1875 lb 852.5 kg

BUILDING 90° CORNERS WITH PISA LIGHT® (Note: Same methods apply to Parkwall and Parkwall Classic)

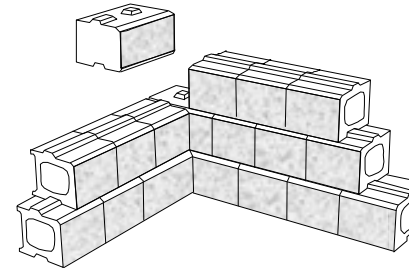


OUTSIDE CORNERS

1st Course— Position corner unit so both rough faces will be exposed in the final construction.

2nd Course— Place a corner unit that faces the other direction on the next course to interlock the corner.

3rd Course— repeat 1st course. Continue pattern until desired height is achieved.



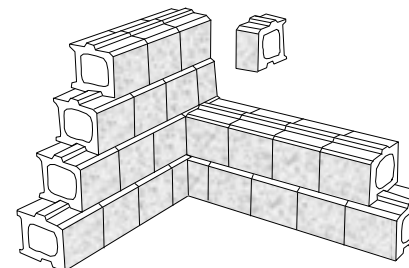
INSIDE CORNERS

Corner Unit Method

Place first corner unit so small face will be hidden behind the final construction.

Place a corner unit from the other direction on the next course to interlock the corners.

Repeat the first course. Continue pattern until desired height is achieved.



Half Unit Method

Complete three or four courses on one side of the corner.

End the wall using half units on every other course. For Pisa Light, each course should extend 19mm (3/4") beyond the first course to match the batter of the adjacent wall. For Parkwall and Parkwall Classic, each course should extend 25mm (1") beyond the first course.

Place units along the second wall using half units on alternate courses.

PISA LIGHT®

Standard Unit

Length: 200 mm (7.9")
Height: 150mm (5.9")
Depth: 216 mm (8.5")



Taper Unit

Length: 200 mm (7.9")
188 mm (7.4") at back
Height: 150 mm (5.9")
Depth: 216 mm (8.5")

Pisa Light® Corner Units (sold in pairs)

Length: 290 mm (11.4")
Height: 150mm (5.9")
Depth: 200 mm (7.9")



9" Cap Stone

Length: 600 mm (23.6")
Height: 75mm (2.95")
Depth: 225 mm (8.9")



Although best suited for straight walls, 9" Capstones can accommodate curves with some cutting.

INSTALLATION DETAILS

The maximum exposed (above grade) height for a gravity wall is 675 mm (26.6"). This includes a 75 mm (3") cap and 4 exposed courses, and requires one additional buried course.

The minimum radius for curves is 2.4 m (8 ft). See Page 52.

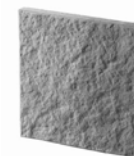
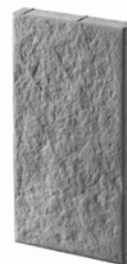
ORDER INFORMATION

All system units sold individually. For delivery, part cubes will be shrink wrapped.

	Standard Unit	Taper Unit	Corner Unit	9" Cap Stone
Sq. Ft. per Bundle	42.6	42.6	22.1	16.9
Pieces per Bundle	132	132	28	35
Pieces per Sq. Ft.	3.1	3.1	1.27	2.07
Pieces per Lin. Ft.	1.52	1.52	0.62	0.51
Lin. Ft. per Bundle	86.6	86.6	45	68.8
Weight of Bundle	3168lb/1440kg	3036lb/1380kg	1288lb/586kg	1890lb/859kg

Tresca Patio Paver (from Bestway)

Tresca comes in three sizes, each being packaged separately.



250 x 500 Module

Length: 508 mm (19.68")
Width: 254 mm (9.84")

Thickness: 50 mm (2")

250x250 Module

Length: 254 mm (9.84")
Width: 254 mm (9.84")

Thickness: 50 mm (2")

500x500 Module

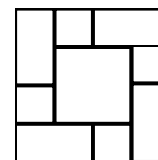
Length: 508 mm (19.68")
Width: 508 mm (19.68")

Thickness: 50 mm (2")

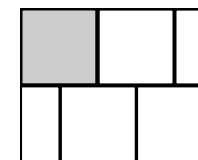
Sq. Ft. per Bundle	83	83	111
Stones per Sq. Ft.	0.72	1.44	0.36
Sq. Ft. per Stone	1.4	0.7	2.8
Stones per Bundle	60	120	40
Weight per Piece	30 lb/13.6 kg	15.5 lb/7 kg	64 lb/29 kg
Weight per Bundle	1800 lb/818 kg	1860 lb/ 845 kg	2560 lb/1164 kg

General Laying Patterns for Tresca

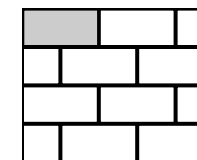
1. The 250x500 Module can be used to create all the general laying patterns shown for Nordic Stone on Page 12.
2. The 250x250 Module or 500x500 Module can be used to create all the general laying patterns shown for Nordic Square on Page 13.
3. The following are some simple repeat patterns that use the different sized stones available in the Traveno line.



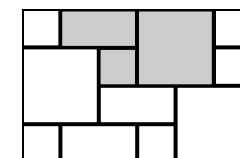
250x250 - 25%
250x500 - 50%
500x500 - 25%



250x250 - 100%
or 500x500 - 100%



250x500 - 100%



250x250 - 14%
250x500 - 28%
500x500 - 58%

Grand Flag

Each layer below is comprised of 3 to 4 individual pieces.
There are two of each layer within a pallet.



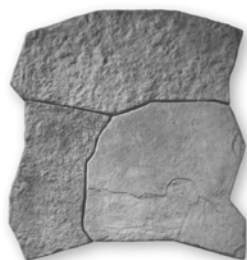
LAYER 1



LAYER 2



LAYER 3



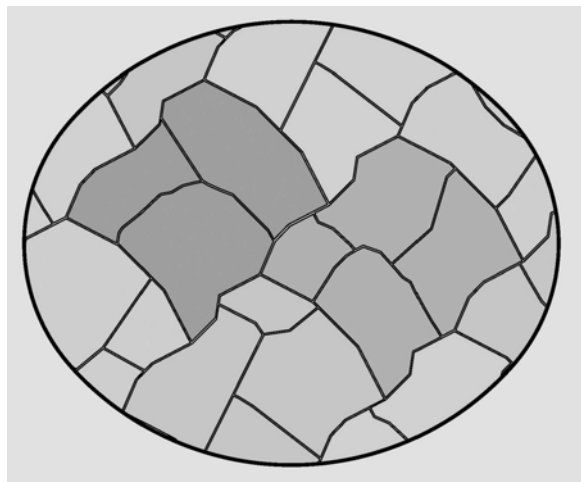
LAYER 4

Each layer has outside dimensions of 42"x38"
(1067mm x 965mm); this assumes a 3/8" (10mm) joint
The pieces are 1.75" (44mm) thick.

Sq. Ft. per Layer	11.25
Layers/Bundle	8
Sq. Ft. per Bundle	90
Weight per Bundle	2160 lb/982 kg

General Laying Patterns for Grand Flag

A diagonal pattern as shown below reduces straight lines allowing for a more random appearance.



BELVEDERE GARDEN WALL COLLECTION

WALL PALLET –Up to 27 sq ft per pallet –2,475 lb (1,125 kg)



Wall Pallet comes with 12 each of the following sizes.

- 6" (tapers to 4") w x 6" h x 9" d (153 (tapers to 102) w x 153 h x 229 d)
- 12" (tapers to 10") w x 6" h x 9" d (305 (tapers to 254) w x 153 h x 229 d)
- 18" (tapers to 16") w x 6" h x 9" d (458 (tapers to 407) w x 153 h x 229 d)
- 6" (tapers to 4") w x 3" h x 9" d (153 (tapers to 102) w x 76 h x 229 d)
- 12" (tapers to 10") w x 3" h x 9" d (305 (tapers to 254) w x 76 h x 229 d)
- 18" (tapers to 16") w x 3" h x 9" d (458 (tapers to 407) w x 76 h x 229 d)

COPING PALLET - 66 linear feet per pallet –1,550 lb (705 kg)



All caps are 2.25" (57 mm) thick. Coping pallet comes with:
 24 - 6" (tapers to 4") w x 10.25" d (153 (tapers to 102) w x 260 d)
 24 - 12" (tapers to 10") w x 10.25" d (305 (tapers to 254) w x 229 d)
 12 - 18" (tapers to 16") w x 10.25" d (458 (tapers to 407) w x 229 d)
 12 - 18" (tapers to 17") w x 10.25" d (458 (tapers to 432) w x 229 d)
 These last 12 coping are finished on one end.

CORNER PALLETS - 24 sq ft per pallet –1,520 lbs (691 kg)

All corners are 15" (tapers to 14") wide
and 9" deep - (381 (tapers to 356) wide
and 229 deep). There are 16 - 3" (76mm)
high and 16 - 6" (153mm) high pieces.
See page 76 for Pillar Cap.

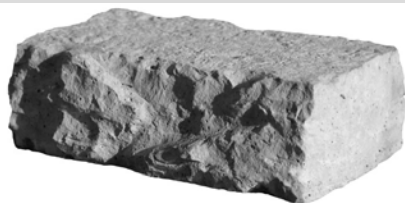


SEE THE BELVEDERE TECHNICAL GUIDE FOR DESIGN AND CONSTRUCTION DETAILS

ROSETTA DIMENSIONAL WALL COLLECTION

STRAIGHT BLOCK

Length: 304 mm (12")
Height: 101 mm (4")
Depth: 203 mm (8")



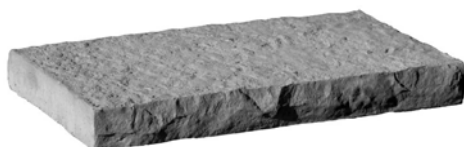
WEDGE BLOCK

Length: 304 mm (12")
tapers to 190 mm (7.5")
Height: 101 mm (4")
Depth: 203 mm (8")



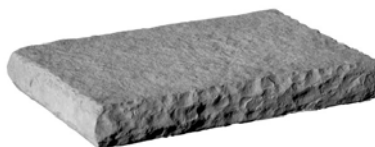
24" COPING

Length: 609 mm (24")
Height: 63 mm (2.5")
Depth: 330 mm (13")



18" COPING

Length: 457 mm (18")
Height: 63 mm (2.5")
Depth: 330 mm (13")



Note: Every third 18" coping has a finished end, length increases to 482 mm (19").

INSTALLATION DETAILS

The maximum exposed (above grade) height for a Dimensional Wall is 406 mm (16"). This consists of 4 exposed courses, and requires one additional fully buried course.

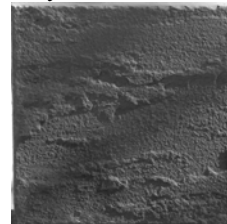
ORDER INFORMATION

Straight and wedge blocks sold individually; coping sold in pairs.

	Straight	Wedge	Coping
Sq. Ft. per Bundle	25	25.64	-
Pieces per Bundle	75	100	18-24"/18-18"
Pieces per Sq. Ft.	3	3 - 4.8 (avg 3.9)	-
Linear Feet per Bundle	75	81.25	63
Weight of Bundle	2100 lb / 955 kg	2000 lb / 909 kg	1950 lb / 886 kg

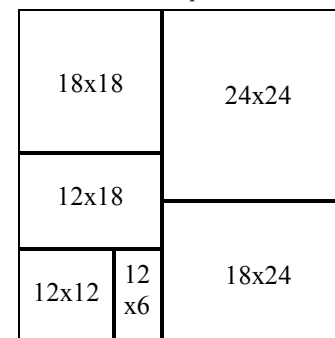
Dimensional Flag

Each layer of Dimensional Flag contains each of the six pieces shown below.



The pieces are 2" (50mm) thick.

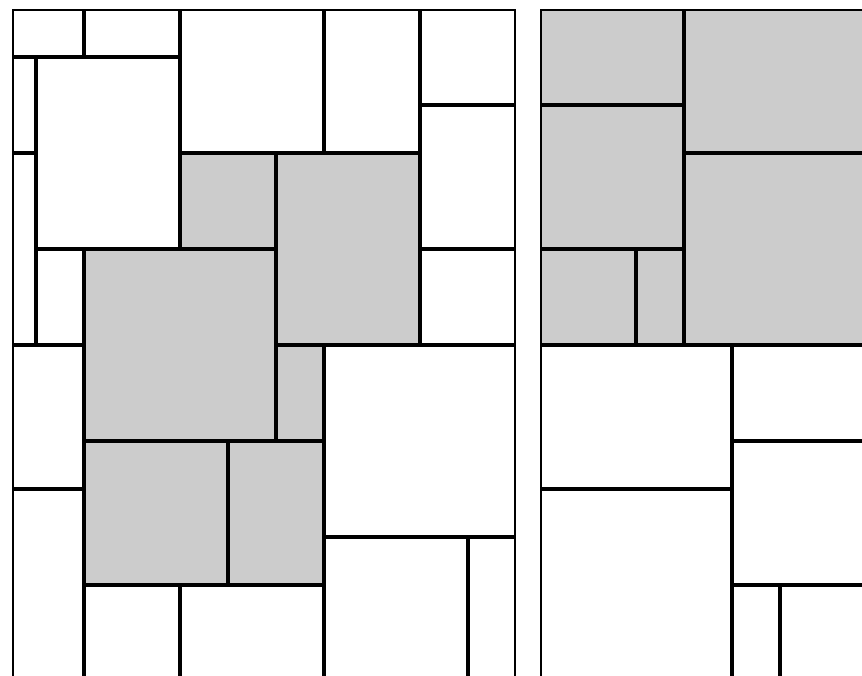
Sq. Ft. per Layer	12.25
Layers/Bundle	8
Sq. Ft. per Bundle	98
Weight per Bundle	2350 lb/1068 kg



Above dimensions are for identification purposes only. The actual dimensions are nominal.

Note: Coverage assumes a 3/8" (10mm) joint.

Sample Laying Patterns for Dimensional Flag





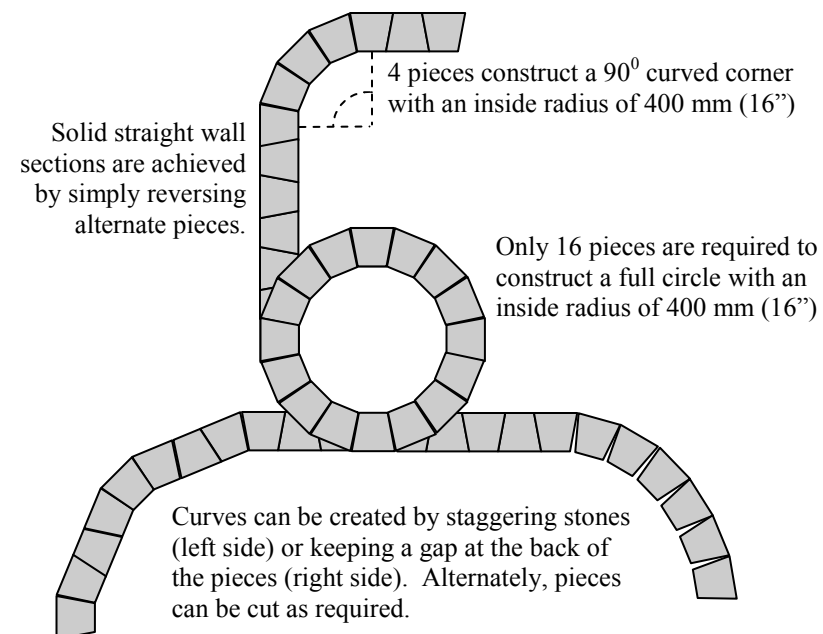
ORDER INFORMATION

All units sold individually.
For delivery, part cubes will
be shrink wrapped.

Note: Ranges based on face
view options.

Sq. Ft. per Bundle	30 to 36.5
Pieces per Bundle	150
Pieces per Sq. Ft.	4.1 to 5
Linear Feet per Bundle	94
Weight of Bundle	2850 lb/1293 kg

CURVED WALL INSTALLATION DETAILS



STEP INSTALLATION DETAILS

Curved or half round steps can be created using Wedgestone™ and Wedgestone™ Classic. However, it is recommended that the stones be glued together, that 1.5 courses be buried, and that geogrid be incorporated, to prevent any movement.



Wedgestone™ / Wedgestone™ Classic

WEDGESTONE™
Standard Unit Coping Unit

WEDGESTONE™
CLASSIC



Length: 225 mm tapered to 150 mm (8.9" tapered to 5.9")
Height: 100mm (3.93")
Depth: 200 mm (7.87")

Note: All pieces have textured faces on both sides!
Wedgestone™ Classic only comes in Coping Units.

SETBACK OPTIONS

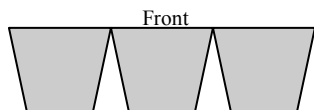
Standard units have grooves on the top surface that allow for variable stacking options, as follows:

	Resulting Batter	Maximum Exposed Wall Height	Maximum Total Courses
Vertical Wall	0°	400 mm (15.75")	4 exposed, 1 buried
One groove setback	14°	600 mm (23.6")	6 exposed, 1 buried

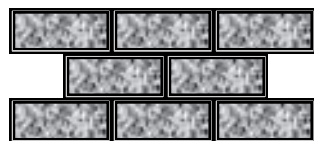
FACE VIEW OPTIONS

There are two options, depending on how the stones are placed

Method A– Uniform



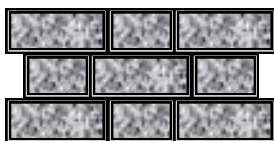
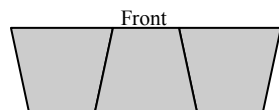
Top View



Front Face

1.35 pcs per linear foot

Method B- Random



1.6 pcs per linear foot

RECOMMENDED WALLS BASED ON EXPOSED HEIGHT

Note: Assuming no surcharge and normal site conditions.
Always follow manufacturer guidelines and engineered drawings

WALL SELECTION CHART

LOW WALLS (<27")

Wedgestone and Wedgestone Classic
Parkwall and Parkwall Classic
Pisa Light
Dimensional Classic
Rosetta Dimensional Wall
Rosetta Belvedere Wall
Outcropping
Servian

WALLS UPTO 40"

Parkwall and Parkwall Classic
Rosetta Belvedere w/ Geogrid
Outcropping
Freestanding Outcropping
Servian Wall

WALLS OVER 40"

Parkwall and Parkwall Classic w/Geogrid
Outcropping (with reinforcement over 5.5')
Servian Wall (up to 54")

OTHER WALL PRODUCT APPLICATIONS

STRAIGHT STEPS
GARDEN EDGING
TERRACED WALLS

CURVED STEPS
DRIVEWAY EDGING
FREE STANDING WALLS

Before construction of any wall, consult the manufacturer for best practices and their recommendations.

RETAINING WALL INSTALLATION

STEP 1- DESIGN AND LAYOUT

The starting point of any project is the preliminary design drawing. The drawing should include an overview of the project (site plan) and one or more cross sections through the wall (profiles), and should be done on graph paper to a convenient scale so that it is easy to read and estimate quantities from.

POINTER: Remember to incorporate the layout of the drainage system, specifically the outlet(s), in the design.

NOTE: The Ontario Building Code requires that a building permit be obtained for walls in excess of 1 metre that are adjacent to: (A) public property; (B) access to a building; or (C) private property to which the public is admitted. To assist with building permit applications, typical cross sections are available for most walls (and at various heights) for reference, or arrangements can be made for a complete engineered designs to be conducted.

It is further recommended that an engineered design be prepared for walls that: include geogrid; are being installed on questionable soil; have steep slopes at the top or bottom; are waterfront applications; or, include railings / barriers.

STEP 2- ESTIMATE QUANTITIES

Items to be estimated:

- 1- Volume of excavation.
- 2- Area of geotextile.
- 3- Length of drain pipe.
- 4- Volume of granular.
- 5- Number of wall units.
- 6- Number of coping units.

Optional items:

- Area of geogrid.
- Amount of adhesive.

Volume of Excavation

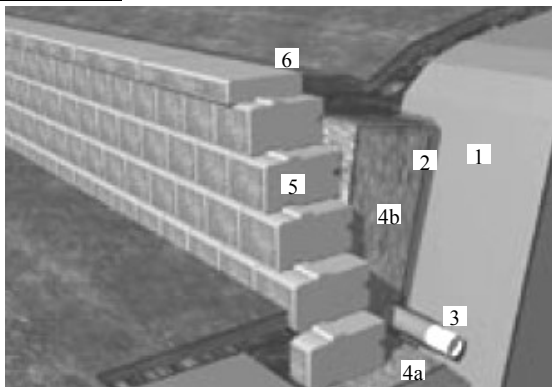
To calculate the total excavation volume, you need to know the depth and width of the base trench, and the angle of repose of the native soils. These items are discussed in greater below.

Area of Geotextile

Geotextile should line the entire drainage layer behind the wall from top to bottom. Ensure there is adequate extra material at the top of the slope to be able to fold the geotextile back towards the wall once all the drainage material is in place. Also remember to provide extra material for overlap of lengths.

Length of Drain Pipe

A drain pipe is required behind all retaining walls to provide a route for water to escape. The drain pipe should run the full length of the wall.



Number of Pieces- PISA LIGHT®, PARKWALL®, PARKWALL® CLASSIC

Height of wall (metres)	Length of Wall (metres)																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0.6	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	425	450	475	500
1.2	45	90	135	180	225	270	315	360	405	450	495	540	585	630	675	720	765	810	855	900
1.8	65	130	195	260	325	390	455	520	585	650	715	780	845	910	975	1040	1105	1170	1235	1300
2.4	85	170	255	340	425	510	595	680	765	850	935	1020	1105	1190	1275	1360	1445	1530	1615	1700
3	105	210	315	420	525	630	735	840	945	1050	1155	1260	1365	1470	1575	1680	1785	1890	1995	2100

Note: Wall height represents exposed portion, estimated number of pieces includes sufficient for 1 buried course.

Type of Coping	Length of Wall (metres)																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
9" Coping	2	4	5	7	9	10	12	14	15	17	19	20	22	24	25	27	29	30	32	34
12" Cap Stone	2	4	5	7	9	10	12	14	15	17	19	20	22	24	25	27	29	30	32	34
Wedge Cap	6	11	16	22	27	32	38	43	48	54	59	64	70	75	80	86	91	96	102	107

Note: Coping estimates rounded up to allow for cutting.

Number of Pieces— WEDGESTONE™, WEDGESTONE™ CLASSIC

EASY WALL ESTIMATOR

Height of wall (metres)	Length of Wall (metres)																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0.2	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320
0.3	21	43	64	85	107	128	149	171	192	213	235	256	277	299	320	341	363	384	405	427
0.4 (see note 2)	26	54	80	106	134	160	186	214	240	266	294	320	346	374	400	426	454	480	506	534
0.5	32	64	96	128	160	192	224	256	288	320	352	384	416	448	480	512	544	576	608	640
0.6 (see note 3)	37	75	112	149	187	224	261	299	336	373	411	448	485	523	560	597	635	672	709	747

Note: Wall height represents exposed portion, estimated number of pieces includes sufficient for 1 buried course. Number of pieces based on Random face view (see page 46)

Note 2: 400mm (4 courses) is the maximum exposed height for a vertical wall, and requires 1 additional buried course (included in estimate)

Note 3: 60mm (6 courses) is the maximum exposed height for a 14 degree setback wall, and requires 1 additional buried course (included in estimate)

Number of Pieces— ROSETTA® DIMENSIONAL WALL (Straight)

Height of wall (metres)	Length of Wall (metres)																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0.2	10	20	30	39	49	59	69	79	89	98	108	118	128	138	148	157	167	177	187	197
0.3	13	26	39	52	66	79	92	105	118	131	144	157	171	184	197	210	223	236	249	262
0.4 (see note 2)	16	33	49	66	82	98	115	131	148	164	180	197	213	230	246	262	279	295	312	328

Note: Wall height represents exposed portion, estimated number of pieces includes sufficient for 1 buried course.

Note 2: 400mm (4 courses) is the maximum exposed height for a vertical wall, and requires 1 additional buried course (included in estimate)

Volume of Granular

Granular fill is required for the granular base (4a) and the drainage layer behind the retaining wall (4b). The granular base material should be well-graded, free draining material suitable for the given application (e.g. Granular A). The drainage material should be clear stone (no sharps) or pea gravel. To calculate the respective volumes, measure the cross sectional area of each of the materials from each of the cross sectional drawings and multiply these by the length of the applicable wall sections.

POINTER: If the native soil is a compactable material, it may be possible to use it for part of the backfill behind the retaining wall (clear stone or gravel would still be required for at a minimum a 300 mm (12") thick drainage layer directly behind the wall). The geotextile would be placed between the replaced native material and the drainage layer.

Number of Wall Units

Remember to provide enough wall units for the exposed and buried portions of the wall. The rule of thumb is to at a minimum fully bury one course (row) or 10% of the total wall height, whichever is greater. The Easy Wall Estimator on Pages 44-45 has been developed to assist with this calculation.

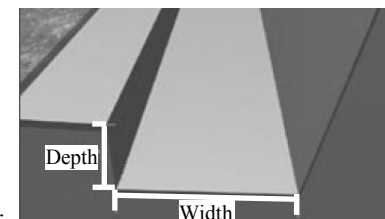
Number of Coping (Wall Cap) Units

The Easy Wall Estimator on Pages 44-45 also includes a table to assist with this calculation. Remember to provide some extras if there are corners or curves in the wall where coping units may need to be cut.

STEP 3— EXCAVATION

POINTER: Remember to complete your locates prior to starting the work.

The excavation depth is the sum of the depth of the buried course(s) plus a minimum of 150 mm (6") for the granular base.



The offset between the front of the excavation and the front of the wall is typically 100-150 mm (4-6"), which is the minimum width that can be properly compacted using standard tools of the trade. The offset between the back of the wall and the back of the excavation is at a minimum 150 mm (6") for low walls (<27") and 300 mm (12") for higher walls. The total width of the excavation is the sum of the front offset, the depth of the unit, and the back offset.

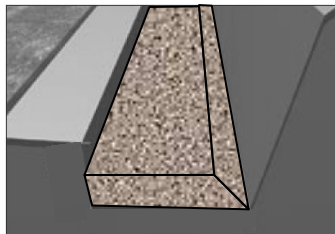
The angle of repose for the native soils is the angle at which the soil can be left without collapsing. This can range from near vertical (90° from the horizontal for dense clay to 27° from the horizontal for loose sand. The higher the angle, the smaller the excavation.

When completed, the bottom of the excavation should be slightly sloped towards the Drain Pipe discharge point(s), and should be free of debris such as large stones, roots, etc. Run a compactor over the bottom to level it out and to evaluate the stability of the native material.

STEP 4– PREPARE FOUNDATION

POINTER: A solid and flat granular base will simplify the remainder of the installation process. Take the time to make sure this step is done correctly.

Backfill base of trench in 75mm (3") lifts to desired grade, compacting the material to at a minimum 98% Standard Proctor density. Leave a v-notch at the back of the excavation for the drain pipe. Set a string level to verify final grade. Ensure base is level front to back and side to side as this will minimize the leveling of individual blocks and will ensure straight lines and smooth arcs. As an option, a skim coat (2" thick layer) of unreinforced concrete can be used to create a durable leveling surface.

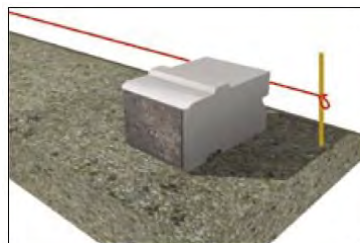


Lay the geotextile starting just under the back of the wall and up the back slope of the trench. Remember to leave adequate material at the top of the slope for the fold back, and to overlap the separate pieces a minimum of 150 mm (6"). Use sand bags or similar to keep the geotextile in place as required.

Place the drain pipe in the v-notch at the back of the foundation, and surround with drain rock.

STEP 5– LAYING FIRST COURSE

Select the starting point for the wall. If the base of the wall is stepped up, start at the lowest point and work up; remember to adjust for the natural batter in the wall between steps. If there is an outside corner, start with the corner unit (to potentially avoid having to cut stones later on to fit).



Set a string level to mark the back of the first course. Use a level to ensure blocks are level front to back and side to side.



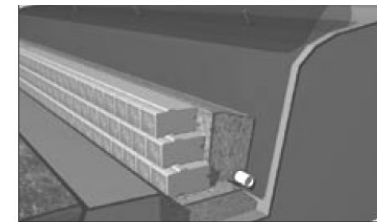
POINTER: For a non-battered wall, level the blocks from side to side, but tilt the back slightly down (approximately 2%) so that the entire wall, when constructed leans slightly toward the soil being retained.

Backfill on both sides of the wall simultaneously to prevent the blocks from moving. Place material in 3" lifts and compact to 95% Std Proctor Density. Compacted backfill to be level with back of the course.



STEP 6- REMAINING COURSES

Sweep the top of each course prior to proceeding. Place next course of units in a running bond pattern so that the middle of the unit is approximately above the joint between the underlying blocks. **NEVER ALIGN BLOCKS VERTICALLY.** After laying a course, backfill behind wall to the same elevation as the top of the just placed units.



POINTER: Ensure compaction equipment is adequately sized to provide proper compaction but not so large as to push the wall out. Check levelness of wall after each layer of backfill; re-align wall if required.

STEP 7– COPING AND GRADING

Where coping is required, sweep the top of the underlying course prior to proceeding. Place a line of butyl tape or Bond Loc adhesive near the front and back of the underlying course. Place the coping unit on top and apply some pressure to secure.



Prior to backfilling behind the coping and last wall unit, pull the filter cloth towards the back of wall and tuck in place. Fill to final grade using a layer of clay and then topsoil to suit desired conditions, and ensure final slopes allow for proper drainage away from, or over the top of, the wall.

ADDITIONAL TIPS– GEOGRID REINFORCED WALLS

In simplest terms, a retaining wall uses its total weight to hold back the soil located behind it. With a gravity wall, the total weight is the sum of the blocks being used. With a reinforced wall, the total weight is the sum of the blocks and the backfill within which the geogrid is located.



For geogrid walls, the following changes are made to the installation instructions:

Step 2- The offset between the front of the wall and the back of the excavation equals the specified length of the geogrid.

Step 6– Precut the geogrid from the roll to the specified length and perpendicular to the direction of primary strength. Continue wall and backfill placement as outlined above up to elevation of first layer of geogrid. The compacted backfill material should be level with the back of the wall unit to allow the geogrid to be laid out flat. Lay the geogrid starting within 25mm (1") of the face. Lay the next row of wall units to secure the geogrid in place. Pull the geogrid taught to its full length and stake in place at back to maintain tension. Backfill and compact next lift.